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Please distribute to the following:

100/300 AREA UNIT MANAGER MEETING
ATTENDANCE AND DISTRIBUTION

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Gadbois, Larry E	Gadbois.larry@epa.gov	B1-46	EPA
Hadley, Karl A	karl.hadley@wch-rcc.com	H4-21	WCH

100/300 AREA UNIT MANAGERS MEETING
APPROVAL OF MEETING MINUTES

November 8, 2012

APPROVAL: _____ Date 1/10/13
Mark French, DOE/RL (A3-04)
River Corridor Project Manager

APPROVAL: _____ Date 1/10/13
Briant Charboneau, DOE/RL (A6-38)
Groundwater Project Manager

APPROVAL: _____ Date 1/10/13
Nina Menard, Ecology (H0-57)
Environmental Restoration Project
Manager

APPROVAL: _____ Date 1/10/13
Laura Buelow, Rod Lobos, or Christopher
Guzzetti, EPA (B1-46)
100 Area Project Manager

APPROVAL: _____ Date 1-10-13
Larry Gadbois, EPA
(B1-46)
300 Area Project Manager

100 & 300 AREA UNIT MANAGER MEETING MINUTES

Groundwater and Source Operable Units; Facility Deactivation, Decontamination, Decommission, and Demolition (D4); Interim Safe Storage (ISS); Field Remediation (FR); Mission Completion; and 100-K Sludge Treatment Project and 100-K Facility Demolition and Soil Remediation projects

November 8, 2012

ADMINISTRATIVE

- Next Unit Manager Meeting (UMM) – The meeting scheduled for December 13, 2012, has been cancelled. The next meeting will be held January 10, 2013, at the Washington Closure Hanford (WCH) Office Building, 2620 Fermi Avenue, Room C209.
- Attendees/Delegations – Attachment A is the list of attendees. Representatives from each agency were present to conduct the business of the UMM.
- Approval of Minutes – The October 11, 2012, meeting minutes were approved by the U.S. Environmental Protection Agency (EPA), Washington State Department of Ecology (Ecology), and U.S. Department of Energy, Richland Operations Office (RL).
- Action Item Status – The status of action items was reviewed and updates were provided (see Attachment B).
- Agenda – Attachment C is the meeting agenda.

EXECUTIVE SESSION (Tri-Parties Only)

An Executive Session was not held by RL, EPA, and Ecology prior to the November 8, 2012, UMM.

HEXAVALENT CHROMIUM GROUNDWATER PLUMES IN 100 AREA

DOE indicated that it will be issuing a letter to EPA and Ecology documenting the completion of Tri-Party Agreement (TPA) Target M-016-110-T01 scope (see DOE Letter #12-AMRP-0172).

100-F & 100-IU-2/100-IU-6 AREAS (GROUNDWATER, SOILS, D4/ISS)

Attachment 1 provides status and information for groundwater. Attachment 2 provides status and information for Field Remediation activities. Attachment 3 provides the Field Remediation Schedule for IU-2/6. No issues were identified and no agreements or action items were documented.

100-D & 100-H AREAS (GROUNDWATER, SOILS, D4/ISS)

Attachment 1 provides status and information for groundwater. Attachment 2 provides status and information for Field Remediation activities. Attachment 4 provides the Field Remediation Schedule for 100-D. Attachment 5 provides the Field Remediation Schedule for 100-H. Attachment 6 provides status and information for D4/ISS activities at 100-N, 100-D and 100-B. No issues were identified and no agreements or action items were documented.

100-N AREA (GROUNDWATER, SOILS, D4/ISS)

Attachment 1 provides status and information for groundwater. Attachment 2 provides status and information for Field Remediation activities. Attachment 6 provides status and information for D4/ISS activities at 100-N, 100-D and 100-B. Attachment 7 provides the 100-N Area FR Schedule. No issues were identified. Attachment 8 is a paper to close-out Action Item 100-193 regarding Elevated Total Organic Carbon Concentrations in Well 199-N-165.

Action Item 1: DOE will begin reporting 100-N apatite barrier performance in the UMM updates in terms of % reduction (as described in the test plans) and in terms of groundwater Sr-90 concentration exiting the barrier and entering the Columbia River. (Concentrations entering the Columbia River are pertinent, as the remedial action goal in the IROD Amendment is the 8 pCi/L Drinking Water Standard. The IROD amendment authorized the full length of the barrier.)

Agreement 1: Attachment 9 provides a 100-N Ancillary Facilities Removal Action Sampling Determination Form (Rev. 1) for Building 1900-N.

Agreement 2: Attachment 10 provides DOE's and Ecology's concurrence that 199-N-173 does not need to be included in the bioventing well network.

Agreement 3: Attachment 11 provides Ecology's agreement that the proposed test pit location for UPR-100-N-42 is acceptable.

Agreement 4: Attachment 12 provides DOE's and Ecology's concurrence with the plan for the expansion of the 100-N-63:2 land bridge.

Agreement 5: Attachment 13 provides DOE's and Ecology's concurrence of the 128-N-1 partial backfill request to exclude the area where additional excavation will take place around EXC-13 to be consistent with the approved plume chase request.

100-K AREA (GROUNDWATER, SOILS, D4/ISS)

Attachment 1 provides status and information for groundwater. Attachment 2 provides status and information for Field Remediation activities. Attachment 14 provides a status of and Attachment 15 provides a schedule for the 100-K Sludge Treatment Project and the 100-K Facility Demolition and Soil Remediation projects. Attachment 16 provides a schedule for Field Remediation at the 100-K Area. No issues were identified and no action items were documented.

Agreement 1: Attachment 17 provides EPA's approval to establish a waste container storage area at the 100-K Area to support management of lead contaminated soil from 100-K-91.

100-B/C AREA (GROUNDWATER, SOILS, D4/ISS)

Attachment 1 provides status and information for groundwater. Attachment 2 provides status and information for Field Remediation activities. Attachment 6 provides status and information for D4/ISS activities at 100-N, 100-D and 100-B. Attachment 18 provides a schedule for Field Remediation at 100-B/C Area. No issues were identified and no agreements or action items were documented.

300 AREA – 618-10/11 (GROUNDWATER, SOILS)

Attachment 1 provides status and information for groundwater. Attachment 2 provides status and information for Field Remediation activities. No issues were identified and no agreements or action items were documented.

300 AREA - GENERAL (GROUNDWATER, SOILS, D4/ISS)

Attachment 1 provides status and information for groundwater. Attachment 19 provides status of the 300 Area Closure Project activities. No issues were identified and no agreements or action items were documented.

Agreement 1: Attachment 20 provides DOE's and EPA's approval of TPA-CN-534 to revise DOE/RL-2001-47, Rev. 3, *Remedial Design Report/Remedial Action Work Plan for the 300 Area*, to delete text that is no longer reflective of preferred excavation methods.

Agreement 2: Attachment 21 provides DOE's and EPA's approval of TPA-CN-535 to revise DOE/RL-2001-48, Rev. 3, 300 Area *Remedial Action Sampling and Analysis Plan,* to update EPA analytical methods for cyanide and sulfide.

MISSION COMPLETION PROJECT

Attachment 22 provides status and information regarding the Long-Term Stewardship, the Remedial Investigation of Hanford Releases to the Columbia River, and a Document Review Look-Ahead. No issues were identified and no agreements or action items were documented.

5-YEAR RECORD OF DECISION ACTION ITEM UPDATE

No changes were reported to the status of the CERCLA Five-Year Review action Items. No issues were identified and no agreements or action items were documented.

Attachment A

100/300 AREA UNIT MANAGER MEETING
ATTENDANCE AND DISTRIBUTION
November 8, 2012

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Attachment B

100/300 Area UMM
Action List
November 8, 2012

Open (O)/ Closed (X)	Action No.	Co.	Actionee	Project	Action Description	Status
O	100-193	RL	M. Thompson	100-N	At the next UMM, DOE will discuss the potential sources of total organic carbon detected at well 199-N-165 down-gradient from the 1324-N/NA treatment, storage, and/or disposal units.	Open: 1/12/12; Action:
X	100-195	RL	R. Guercia	300	DOE will determine if placing inert demolition debris in excavations as backfill triggers any landfill closure requirements.	Open: 7/12/12; Action: Closed 10/11/12
O	100-196	RL	J. Neath	100-D	DOE will determine if the ISRM Pond had been incorporated into the WIDS database, and if not, to finalize a discovery site checklist and get the site into WIDS via the MP-14 process.	Open: 7/12/12; Action:

Attachment C

100/300 Area Unit Manager Meeting
November 8, 2012
Washington Closure Hanford Building
2620 Fermi Avenue, Richland, WA 99354
Room C209; 2:00p.m.

Administrative:

- Approval and signing of previous meeting minutes (October 11, 2012)
- Update to Action Items List
- Next UMM (12/13/2012, Room C209)

Open Session: Project Area Updates - Groundwater, Field Remediation, D4/ISS:

- 100-F & 100-IU-2/6 Areas (Greg Sinton/Tom Post/Jamie Zeisloft)
- 100-D & 100-H Areas (Jim Hanson/Tom Post/Elwood Glossbrenner)
- 100-N Area (Joanne Chance, Rudy Guercia, Mike Thompson)
- 100-K Area (Jim Hanson, Jamie Zeisloft, Tom Teynor)
- 100-B/C Area (Greg Sinton, Tom Post)
- 300 Area - 618-10/11 exclusively (Jamie Zeisloft)
- 300 Area (Mike Thompson/Rudy Guercia)
- Mission Completion Project (John Sands)

Special Topics/Other

- 5-Year Record of Decision Action Item Update (Jim Hanson)

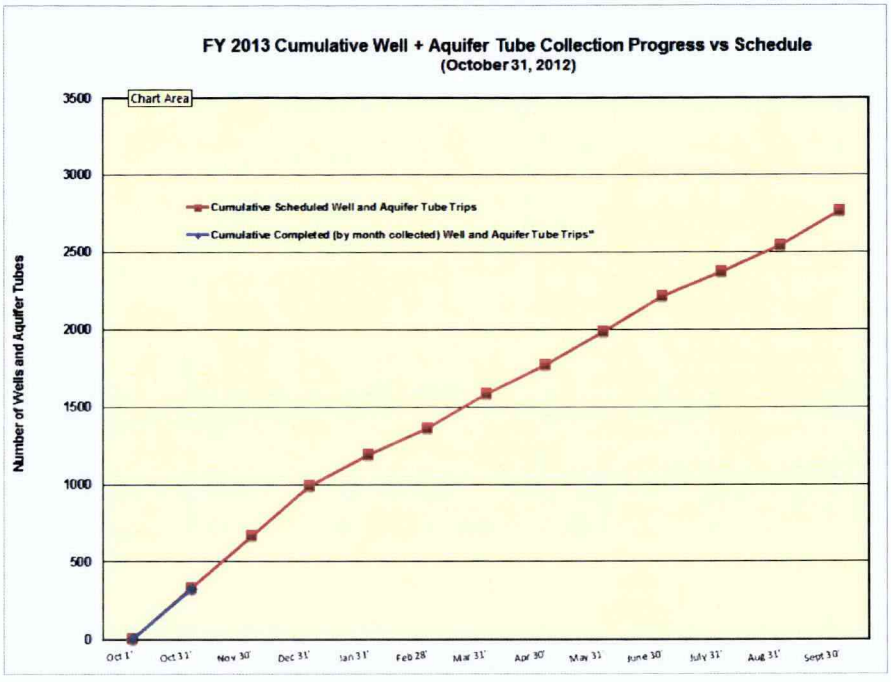
Adjourn

Attachment 1

100/300 Areas Unit Managers Meeting
November 8, 2012

General information on Groundwater Sampling

The wells sampled successfully during the reporting period are presented in the table on the last page of this handout. FY 2013 sampling has commenced, and progress is shown in the figure at the right. To account for the optimization that occurs during the sample scheduling, sample events (or well trips) are now being reported, rather than each specific sample that is scheduled. This is to accommodate the current database architecture of HEIS and the scheduling tools. Results of sampling are available in the Environmental Dashboard at http://environet.hanford.gov/eda/.



Hanford Site Groundwater Monitoring for 2011 (DOE/RL-2011-118, Rev. 0) was released in August. The full report is available online via the Soil and Groundwater Remediation Project's web page: http://www.hanford.gov/page.cfm/SoilandGroundwater.

Hexavalent Chromium Groundwater Plumes in 100 Area – David Dooley / Lorna Dittmer

(M-016-110-T01, DOE shall take actions necessary to contain or remediate hexavalent chromium groundwater plumes in each of the 100 Area NPL operable units such that ambient water quality standards for hexavalent chromium are achieved in the hyporheic zone and river water column.)
Schedule Status – On schedule.

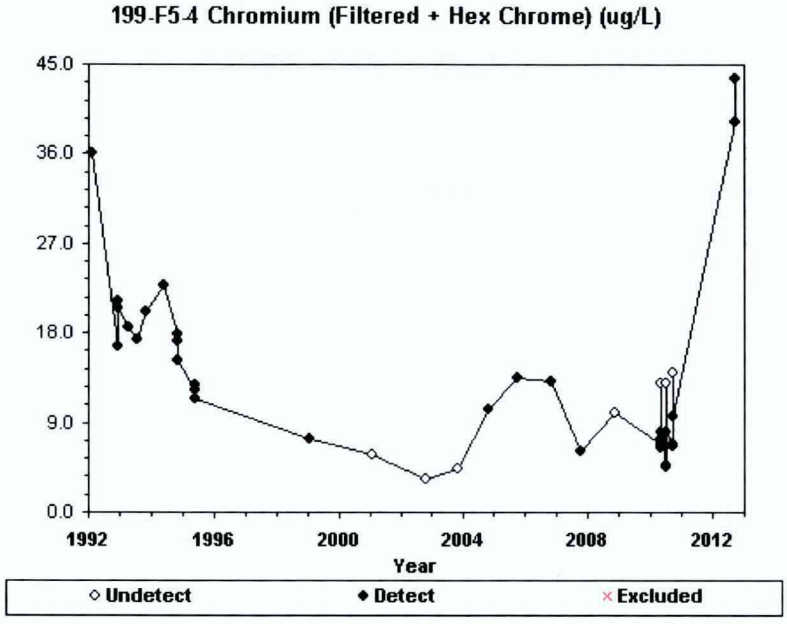
- White paper has been circulated to EPA and Ecology.

100-FR-3 Groundwater Operable Unit – Bert Day / Mary Hartman

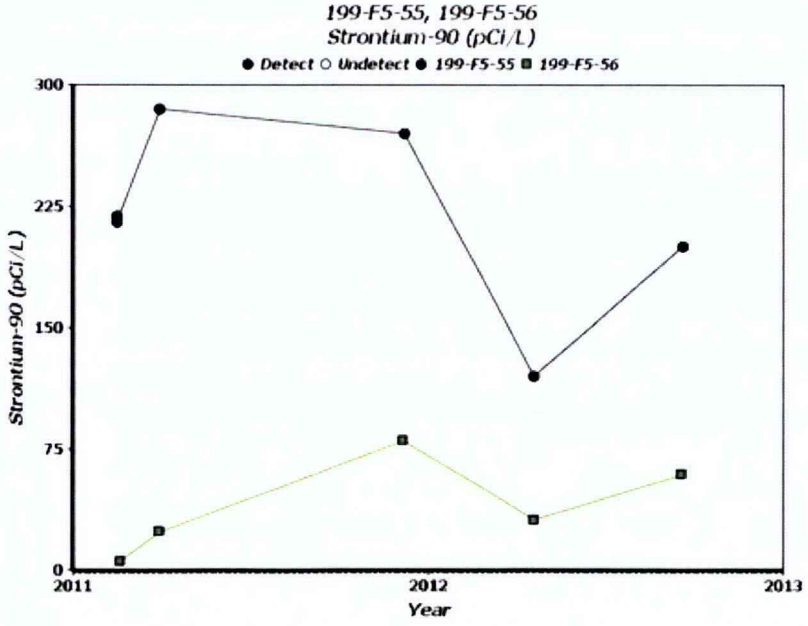
(M-015-64-T01, 12/17/2011, Submit CERCLA RI/FS Report and Proposed Plan for the 100-FR-1, 100-FR-2, 100-FR-3, 100-IU-2, and 100-IU-6 Operable Units for groundwater and soil.)
Schedule Status – Missed. The planned delivery date for the 100-F/IU Draft A RI/FS Report to the regulators is December 28, 2012.

- CERCLA Process Implementation:
  - RI/FS: The Draft A, working draft, RL review comments were received on 10/29/12. The team is drafting responses and updating the document.
  - Proposed Plan: The Decisional Draft is currently in RL review.
- Monitoring and Reporting:
  - The FY 2013 well sampling was scheduled for October and was completed by the end of the month, except for well 699-63-25A, which will be sampled in November. Notable results received to date are discussed below. Aquifer tube sampling was completed successfully except one site (AT-F-2-M) south of 100-F that is difficult to access and often under water. Previous samples from this tube have been uncontaminated and dominated by river water so we propose removing the tube from the sampling schedule. Cr(VI) concentrations in 100-F aquifer tubes were below or near detection limits.

- Cr(VI) and total chromium concentrations increased sharply in 199-F5-4 in central 100-F to 44 µg/L. The cause of the change is unknown and concentrations didn't increase in other wells in this area. Well 199-F5-4 is sampled biennially. Nearby well 199-F5-48 is on a semiannual schedule.

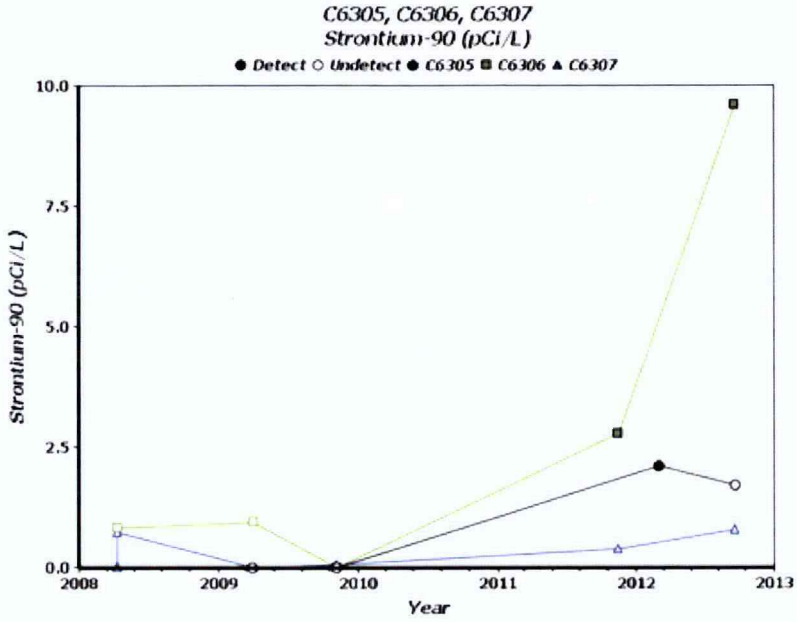


- Strontium-90 remained elevated in temporary wells 199-F5-55 (eastern 100-F) and 199-F5-56 (near reactor building). Well 199-F5-55 is in the strtonium-90 plume in eastern 100-F and the 199-F5-56 is located in a small, local plume in central 100-F.

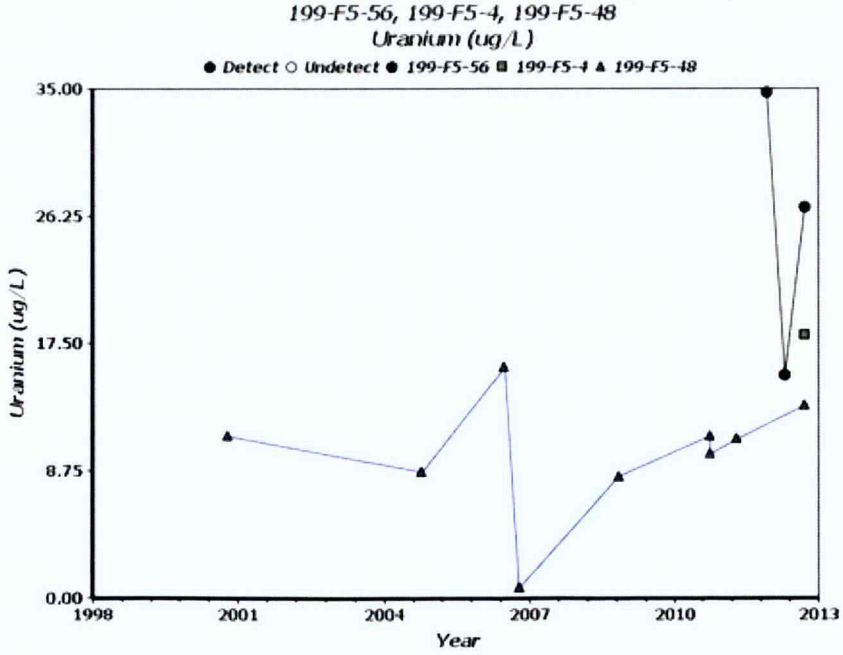


- Strontium-90 increased to 9.6±2.6 pCi/L in September in aquifer tube C6306 in 100-F. This tube is located near the known strontium-90 plume in the aquifer, but this was the first DWS exceedance in any 100-F aquifer tube. The increase may have been caused by the

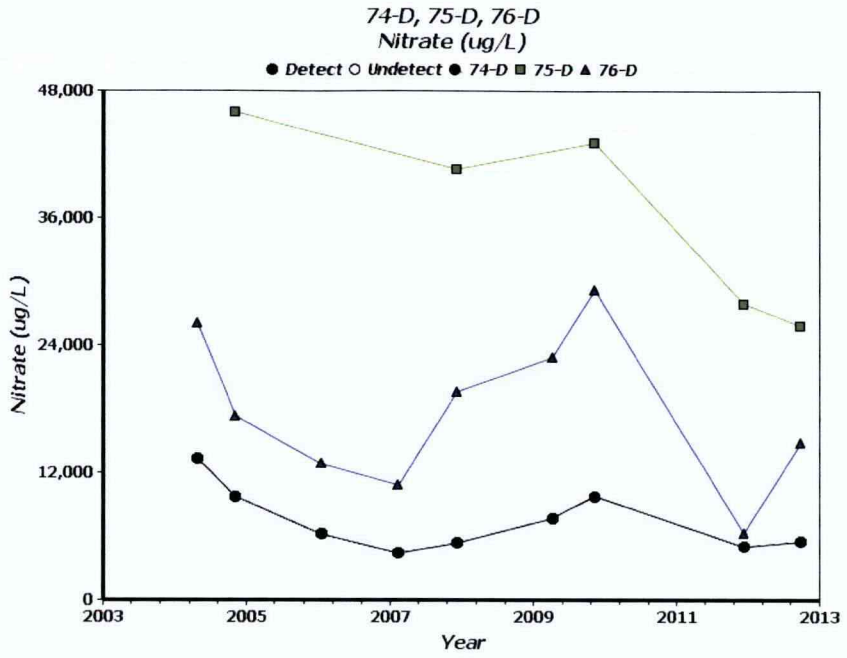
prolonged period of high river stage in summer 2012. C6306 is the mid-depth tube at this cluster; strontium-90 concentrations in the shallow and deep tubes (C6305 and C6307) were much lower. Nearby wells 199-F5-44, 199-F5-43A, and 199-F5-1 were not sampled for strontium-90 this year. Well 199-F5-42 was sampled in late October and results are not yet available.



- Uranium concentrations were below the DWS in September 2012. The highest concentrations were in temporary well 199-F5-56 (26.9 ug/L). Wells 199-F5-4 and 199-F5-48 also contained uranium levels at 18 and 13.2 ug/L, respectively.



- Nitrate concentrations in aquifer tubes south of 100-F remained below the DWS.



100-HR-3 Groundwater Operable Unit – Bert Day / Kris Ivarson

(M-15-70-T01, 11/24/2011, Submit feasibility study report and proposed plan for the 100-HR-1, 100-HR-2, 100-HR-3, 100-DR-1 and 100-DR-2 operable units for groundwater and soil.)
Schedule Status – Missed. The planned delivery date for the 100-D/H Draft A RI/FS Report to the regulators is December 14, 2012.

- CERCLA Process Implementation:
  - RI/FS: The team is mid-process of gaining concurrence on draft responses and updating the document based on RL review comments on the Draft A, working draft.
  - Proposed Plan: The Draft A, working draft, RL review comments were received and the team is drafting responses and updating the document.

- Remedial Actions:
  - Operations continue at DX and HX pump-and treat system. October 1 through 31, 2012 performance:
    - The systems treated 48.6 million gallons
    - The system removed 35.1 kg of hexavalent chromium
- WCH Integration:
  - Power Outages: WCH's planned power outages occurred over the past two consecutive Friday's. The outages rerouted power lines at 100-D to allow access to the 100-D-100 waste site remediation. These outages impacted the two systems in 100-HR-3 and the three systems at 100-KR-4. One additional power outage is anticipated but is not yet scheduled.
  - 100-D and 100-H Well Decommissioning and Replacement: The SAP for well realignment (decommissioning and replacement) is in draft form and incorporates the discussions held with Ecology on September 6 and October 25, 2012. Decommissioning plans are underway.
- Monitoring and reporting:
  - The 100-D/H aquifer tubes and groundwater monitoring are scheduled for sampling in November.

100/300 Areas Unit Managers Meeting
November 8, 2012

100-NR-2 Groundwater Operable Unit – Marty Doornbos / Virginia Rohay

(M-015-62-T01, 9/17/2012, Submit a Feasibility Study [FS] Report and Proposed Plan [PP] for the 100-NR-1 and 100-NR-2 Operable Units including groundwater and soil.)
Schedule Status –Tentative agreement has been reached to change the TPA milestone to June 30, 2013 for delivery of the 100-NR-2 OU Draft A RI/FS Report and Proposed Plan to Ecology.

- CERCLA Process Implementation
  - The schedule for preparation of the RI/FS report and proposed plan has been adjusted to meet the new delivery date of June 30, 2013 for the Draft A documents.
  - Meetings were held with Ecology on October 16th and 22nd to discuss the preliminary model results from the decisional draft RI/FS.

- Yearly Sample Events for 2012
  - Annual sampling of CERCLA and AEA wells was completed on September 27, 2012 for all scheduled wells, with the exception of 199-N-16, where access is limited by nearby soil excavation. RL and Ecology provided approval to decommission well 199-N-16 to allow for continued shallow zone petroleum remediation at that location. If possible, the well will be sampled prior to decommissioning.

- Apatite PRB Performance Monitoring
  - The low river stage (fall) sampling event was conducted on September 26 and 27. Samples were collected from the 900 feet of installed barrier and included 12 monitoring wells and 10 aquifer tubes.

- RCRA Monitoring – 1324-N
  - Sampling has been completed for the five RCRA wells (199-N-165, 199-N-71, 199-N-72, 199-N-73, and 199-N-77) and wells 199-K-151 and 199-K-152 for the expanded analyte list, with the exception of TOC analyses for the two 100-K wells. Sampling for TOC at wells 199-K-151 and 199-K-152 was completed on 10/02/12 and 10/16/12, respectively.
  - A meeting with Ecology was held on October 16th to discuss the elevated TOC results. Verbal confirmation was received from Ecology that the elevated TOC concentrations in well 199-N-165 are not associated with TSD 1324-N/NA. The meeting closes the UMM action to discuss the elevated TOC concentrations with Ecology.
- The 100-N aquifer tubes are scheduled for sampling in December.

100-KR-4 Groundwater Operable Unit – Bert Day / Chuck Miller

- CERCLA Process Implementation:
  - RI/FS and Proposed Plan: Production of both documents are on hold.

- WCH Integration:
  - Power Outages: WCH's planned power outages occurred over the past two consecutive Friday's. The outages rerouted power lines at 100-D to allow access to the 100-D-100 waste site remediation. These outages impacted the two systems in 100-HR-3 and the three systems at 100-KR-4. One additional power outage is anticipated but is not yet scheduled.
- Remedial Actions:
  - Operations continue at KX, KR4, and KW pump-and-treat systems. October 1 through 31, 2012 performance:
    - The systems treated 46.3 million gallons.

- The system removed 5.6 kg of hexavalent chromium

- Well Realignment
  - Well 199-K-173 is operating as an extraction well and continues to exhibit the highest hexavalent chromium concentration of the extraction wells at the KW system (over 120 ug/L).
  - Activities continue to realign well 199-K-182 as an extraction well for the KX system. The well underwent successful acceptance and operational testing in October, but only operated for a few days before the pump failed. A replacement pump is on hand and the repairs are being scheduled.
- KR4 Monthly Monitoring: The monthly monitoring of the KR4 Pump and Treat system was conducted October 19, 2012. Participants included Yakama Nation, Nez Perce Tribe, Wanapum representatives. In one location tire tracks were observed in the dirt adjacent to the gravel road (see the attached photograph, near K-116A). The tracks were within the previously disturbed area inside of the row of tumbleweeds. The consensus among participants was that the incident should be noted but it did not seem to require corrective action.

- Monitoring and Reporting:
  - Aquifer tube at 100-K were sampled in September and October. Of the results received to date, all except 5 aquifer tubes were below 10 ug/L hexavalent chromium. Of those 5 that exceeded, the highest concentration was at aquifer tube AT-K-3, with a concentration of 31 ug/L. ATK-1-D, located at the river shore near KW reactor area exhibited an increase in hexavalent chromium in the last sample, 28.9 ug/L, up from a non-detect in the previous sample. The remaining exceedences were less than 20 ug/L. Aquifer tube 19M, which has exhibited detectable Sr-90 in previous events, exhibited Sr-90 at 5 pCi/L in the most recent event.
  - Hexavalent chromium concentrations in groundwater at 100-K are generally declining in response to on-going pump-and-treat actions and are approaching the 20 ug/L interim action RAO in many locations.
  - Well 199-K-173, which was realigned for extraction, continues to exhibit elevated hexavalent chromium. This well also exhibits decreasing pH, consistent with the pH of the SIR-700 resin effluent generated at the 100-KW pump-and-treat facility.

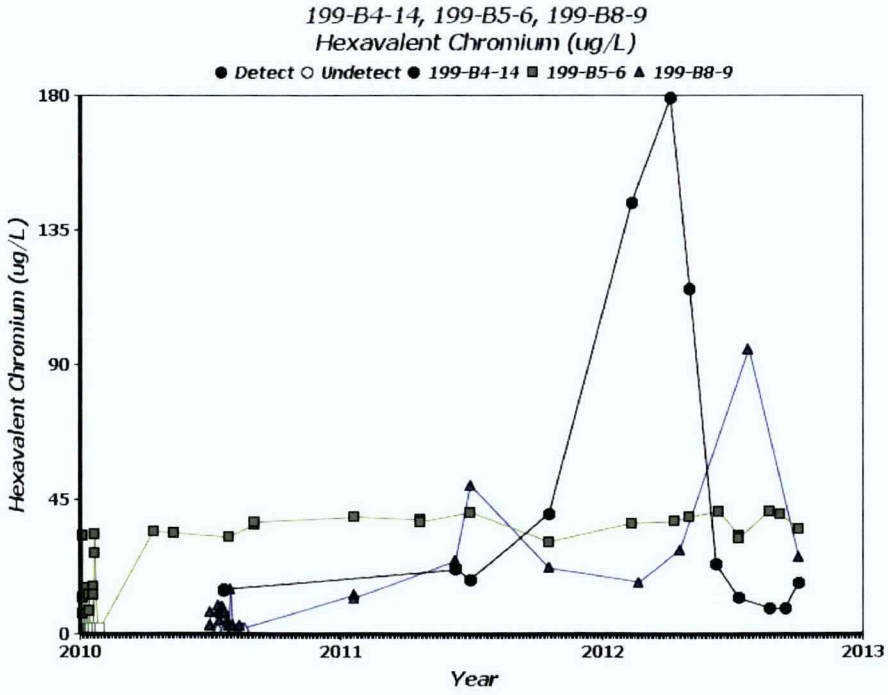
100/300 Areas Unit Managers Meeting
November 8, 2012

100-BC-5 Groundwater Operable Unit – Bert Day/ Mary Hartman

(M-015-68-T01, 11/30/2011, Submit CERCLA RI/FS Report and Proposed Plan for the 100-BC-1, 100-BC-2 and 100-BC-5 Operable Units for groundwater and soil.)
Schedule Status – Missed. The planned delivery date for the 100-BC Draft A RI/FS Report to the regulators is under discussion between the Tri-Parties (see below).

- CERCLA Process Implementation:
  - RI/FS and Proposed Plan: The RI/FS, Draft A (working draft), was delivered on August 24, 2012 for RL review. RL has placed their review on hold pending the agreement with the regulatory agencies to postpone the selection of groundwater remediation alternatives until additional data has been collected. Initial discussions with the regulators indicate that the schedule for RI/FS and PP will be extended to December 2016 in order to reduce uncertainties in the groundwater/surface water interaction and evaluate the impacts of source remediation efforts on the groundwater system.
  - Work Plan and SAP Updates: Data gaps/data needs evaluations were initiated. A scoping meeting was held with EPA on November 1, 2012. The meetings resulted in preliminary agreement on the scope of work.

- Monitoring & Reporting
  - Three wells were sampled in early October. Downgradient of 100-C-7:1, the Cr(VI) concentration increased slightly in shallow well 199-B4-14 (to 17.3 ug/L) and decreased slightly in deep well 199-B5-6 (35.2 ug/L). East of 100-C-7 near C Reactor, the Cr(VI) concentration declined to 25.8 ug/L from a July peak in well 199-B8-9. Wells farther downgradient (east and northeast) will be sampled during the comprehensive, annual sampling event in January 2013.



  - 100-BC aquifer tubes are scheduled for sampling in December.

100/300 Areas Unit Managers Meeting
November 8, 2012

300-FF-5 Groundwater Operable Unit – Marty Doornbos/Virginia Rohay

- RI/FS report (DOE/RL-2011-99) Draft A delivered to EPA and Ecology on December 27, 2011.
  - EPA comments on the RI/FS and PP were received on February 13, 2012. RL's comments were received on the draft Rev. 0 RI/FS on July 9, 2012. All comments have been incorporated, however the draft Rev.0 RI/FS is being continually updated in accordance with the comments received on the PP. The Rev. 0 RI/FS will be finalized after all comments have been resolved on the proposed plan.
- Proposed Plan (DOE/RL-2011-47) Draft A delivered to EPA and Ecology on December 27, 2011.
  - The Draft Rev. 0 PP was provided to EPA on July 13, 2012. Progress continues on resolution of EPA's comments received on July 24th and 30th, August 2nd, September 10th, and October 15th. Currently, there are only a few outstanding issues (i.e., cleanup levels and ARARs) remain to be resolved.
  - The public comment period has been tentatively identified for February 2013.

- The 300-FF-5 Groundwater OU includes the groundwater impacted by releases from waste sites associated with three geographic subregions: 300 Area Industrial Complex, 618-11 Burial Ground, and 618-10 Burial Ground/316-4 Cribs. Principal controlling documents are:
  - 300-FF-5 OU operations and maintenance plan (DOE-RL-95-73, Rev. 1, 2002)
  - 300-FF-5 OU sampling and analysis plan (DOE/RL-2002-11, Rev. 2, 2008)
  - 300 Area RI/FS work plan (DOE/RL-2009-30, Rev. 0, 2010)
  - 300 Area RI/FS sampling and analysis plan (DOE/RL-2009-45, Rev. 0, 2010).

  300 Area Industrial Complex — On May 16, a water line was discovered to be leaking south of the 324 Building. Repairs were completed on May 18 after an estimated 20,000 gallons of water was released to the soil column. A plan to monitor the nearest downgradient wells for potential impacts was approved by DOE and EPA on May 17. Monthly sampling of well 399-4-15 was extended through December 2012 in response to the water line break that occurred to the west of the 324 building on August 30th. The results from this monitoring are as follows:

Well	Date	Gross Alpha (pCi/L)	Uranium (µg/L)	Gross Beta (pCi/L)
399-4-15	5/30/12	23.0	77.5	20.0
399-4-15	6/29/12	24.0	81.5	20.0
399-4-15	7/25/12	28.0	71.5	18.0
399-4-15	8/15/12	56.0	111.0	26.0
399-4-15	9/7/12	31.0	88.3	40.0
399-4-15	10/11/12	Not Available	Not Available	Not Available
399-3-20	5/15/12	20.0	47.1	21.0
399-3-20	8/15/12	Not Analyzed	131.0	Not Analyzed
399-4-9	5/22/12	15.0	32.0	13.0
399-4-9	8/15/12	39.0	70.5	16.0
399-4-14	5/21/12	29.0	84.3	33.0
399-4-14	8/22/12	36.0	98.8	22.0

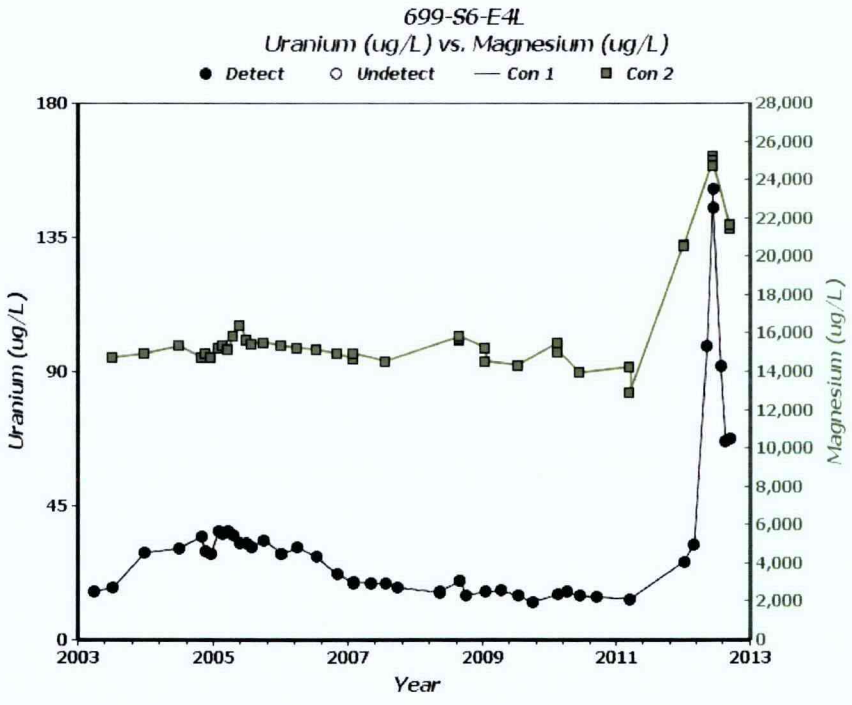
The gross alpha and uranium concentrations in well 399-4-15 were higher in August, but declined to more typical levels in September. This temporary increase in concentration reflects the higher water table conditions associated with the Columbia River that mobilized uranium from the periodically rewetted zone. The gross beta results increased in September. Uranium concentrations in nearby wells 399-3-20, 399-4-9, and 399-4-14 were higher in August than in May; the increases appear to be seasonal.

- 618-11 Burial Ground — Tritium, nitrate, and gross beta results for the sample collected on September 28, 2012 at well 699-13-3A, next to the eastern fence line of the Burial Ground, are consistent with previous concentrations. Well 699-13-3A was sampled again on October 18, 2012.

- 618-10 Burial Ground/316-4 Crib — Groundwater data from June 2012 at well 699-S6-E4L near the 618-10 Burial Ground showed increased concentrations of uranium and magnesium, followed by a decrease in uranium concentrations during July, August, and September (Figure 300FF5-1). This temporary increase in uranium concentrations may have been associated with the excavation activities that began in March 2011 at some of the trenches in the burial ground. To investigate, the monitoring frequency for uranium was increased to monthly at well 699-S6-E4L, and the monitoring frequency for calcium and magnesium (common soil fixatives) was increased to quarterly at wells 699-S6-E4K and 699-S6-E4L. This increased sampling frequency will be performed for a period of six months. Well 699-S6-E4L was sampled on October 11.

Figure 300FF5-1. Uranium and Magnesium Trends (through September 13, 2012) at Well 699-S6-E4L at the 618-10 Burial Ground.

300 Area aquifer tubes are scheduled for sampling in December.



100/300 Areas Unit Managers Meeting
November 8, 2012

Summary of Wells & Aquifer Tubes Sampled in the River Corridor Areas During October 2012						
Week	**100-BC**	**100-K**	**100-N**	**100-D/H**	**100-F**	**300 Area**
01-05 Oct 12	199-B4-14 199-B5-6 199-B8-9	199-K-117A 199-K-20 C6247 C6246 19-M 19-D C6245 C6248 C6249 AT-K-3-M AT-K-3-D C6250 C6251 C6253 C6252 AT-K-3-S	199-K-151 699-87-55	199-D5-121 199-D5-134 Unsuccessful 199-D5-13 199-D5-119 199-D5-120 199-D5-106 199-D5-98 199-D5-122 199-D4-5 199-D5-144 199-D5-102 199-D4-6		
08-12 Oct 12		21-S C6254 C6255 C6256 C6259 C6257 C6258 21-M C6260 AT-K-5-M 199-K-173 AT-K-5-S 199-K-165 C6261 199-K-166 23-M AT-K-4-D AT-K-4-S 22-M 22-D AT-K-4-M AT-K-5-D	26-M 25-D C6263 26-S C6265 26-D AT-K-6-D AT-K-6-M AT-K-6-S C6264	199-D5-131 199-D8-90 199-D8-98 199-D7-6 199-D8-96 199-D8-91 199-D8-97 199-D7-3 199-D8-95 199-D4-96 199-D5-130 199-D4-98 199-D8-89 199-D5-127 Unsuccessful 199-D8-6 199-D4-99 199-D4-97 199-D4-95 199-D5-32 199-D5-20 199-D5-101 699-91-46A 199-H4-15CP 199-D5-99 699-90-45 199-H4-6 199-H4-48 699-96-43 199-H4-3 199-H4-15CS	699-71-30 Unsuccessful 199-F5-45	399-4-15 699-12-4D 699-13-2D 699-S6-E4L 699-S6-E4A

Summary of Wells & Aquifer Tubes Sampled in the River Corridor Areas During October 2012						
Week	**100-BC**	**100-K**	**100-N**	**100-D/H**	**100-F**	**300 Area**
				199-H4-9 699-98-43 699-100-43B 699-97-43B 199-H4-15CR		
15-19 Oct 12		199-K-130 199-K-152	NVP2-116.0 N116mArray-6A N116mArray-4A N116mArray-3A	199-H1-37 199-H4-15A 199-H1-35 199-H1-38 199-H1-40 199-H3-4 199-D2-11 199-D8-71 199-D3-5 699-88-41 199-D5-142 699-97-48B 699-97-45 699-101-45 199-H4-15CQ 199-D2-6 199-D5-40 199-D5-18 199-D5-34 199-H6-4 199-H3-3 199-H6-3 199-H6-1 199-H3-6 199-H3-9 199-H4-11 199-H4-65 199-H3-5 199-H3-10 199-H3-7 199-H5-1A 199-H4-46 199-H4-16 199-H1-7	699-86-42 699-87-42A	C6380 C6378 C6368 C6371 Unsuccessful 699-13-3A
22-26 Oct 12			199-K-189 Unsuccessful 199-K-186 199-K-187 199-K-157 199-K-163 199-K-144 199-K-127	199-D6-3 199-D5-104 199-D5-92 199-D4-39 199-D4-83 199-D5-127 199-H2-1	199-F5-6 199-F5-46 699-62-31 699-71-30 699-60-32 199-F6-1 199-F7-3	C6374 C6375

Summary of Wells & Aquifer Tubes Sampled in the River Corridor Areas During October 2012						
Week	**100-BC**	**100-K**	**100-N**	**100-D/H**	**100-F**	**300 Area**
			199-K-145 199-K-114A 199-K-115A 199-K-113A 199-K-162 199-K-153 199-K-116A 199-K-139 199-K-120A 199-K-154 199-K-138 199-K-137 199-K-132 199-K-146 199-K-148 199-K-147 199-K-161 199-K-178 199-K-171 199-K-168 199-K-19 199-K-37 199-K-184 Unsuccessful 199-K-190 199-K-191 199-K-192 199-K-125A 199-K-131	199-D5-133 199-D5-143 199-D5-39 199-H4-49 199-D5-132	199-F5-42 699-77-54	
29-31 Oct 12		199-K-108A 199-K-124A 199-K-111A DK-04-2 199-K-197 199-K-22 199-K-194 199-K-23		199-D8-101 199-D5-33 199-D5-97 C6287 C5637 C5636 C5635 C5632 C5633 C5634 C6286 C6284 C5638 C6288 C5641 C6285	699-74-44	699-S3-E12

Attachment 2

November 8, 2012 Unit Manager's Meeting
Field Remediation Status

100-B/C

- Continued excavation, load-out and backfill activities at 100-C-7:1
- Commenced backfill activities at 100-C-7
- Power line/pole disposal scheduled to be complete by end of November

100-D

- No excavation/remediation field activities being conducted at 100-D at this time
- Remediation contract awarded to TerranearPMC/Envirocon, trailer mobilization commenced
- Completed backfill activities at 118-D-3 and 100-D-14
- Continued backfill activities at 118-D-2, commenced backfill at 100-D-56

100-H

- No excavation/remediation field activities being conducted at 100-H at this time
- Remediation contract awarded to TerranearPMC/Envirocon
- Completed backfill activities at 128-H-1, commenced backfill at 100-H-37 and 126-H-2

100-K

- Completed remediation of 100-K-93 and Miscellaneous Restoration sites 100-K-25, 100-K-26, 100-K-27, 100-K-29, 100-K-30, 100-K-31 and 100-K-36
- Continued remediation of 100-K-84, 100-K-86, 100-K-87, 100-K-91, 100-K-92 and 100-K-95 and Miscellaneous Restoration site 100-K-131

100-N

- Continued excavation, stockpiling and load-out activities at 100-N-64:1, UPR-100-N-18, UPR-100-N-20 and UPR-100-N-24
- Completed excavation and load-out of plume areas at 128-N-1
- Completed backfill activities at 600-35
- Phase II in-situ bioremediation system for UPR-100-N-17 delivered, commenced installation and testing activities
- Continued preparation of closure documents and conducting verification sampling

618-10 Trench Remediation

- Continued loadout of soil waste to ERDF

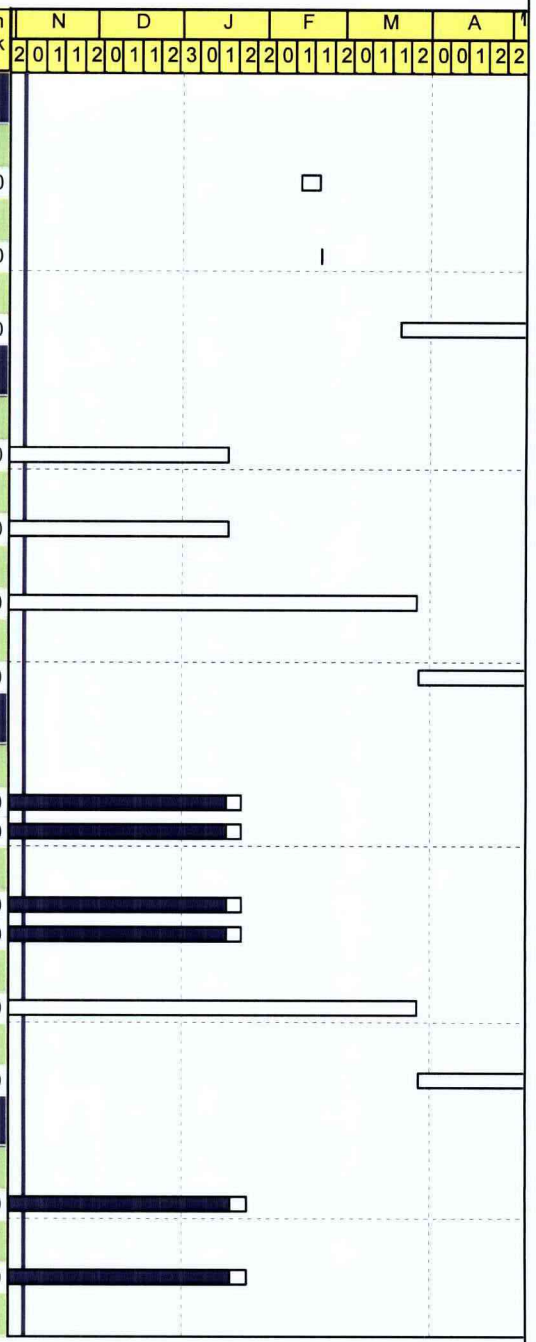
- Continued excavation of trench
- Sent 42 drums to Permafix for treatment
- Acceptance testing for drum penetration facility #1
- Bottle processing campaign anticipated for November

100-IU-2/6

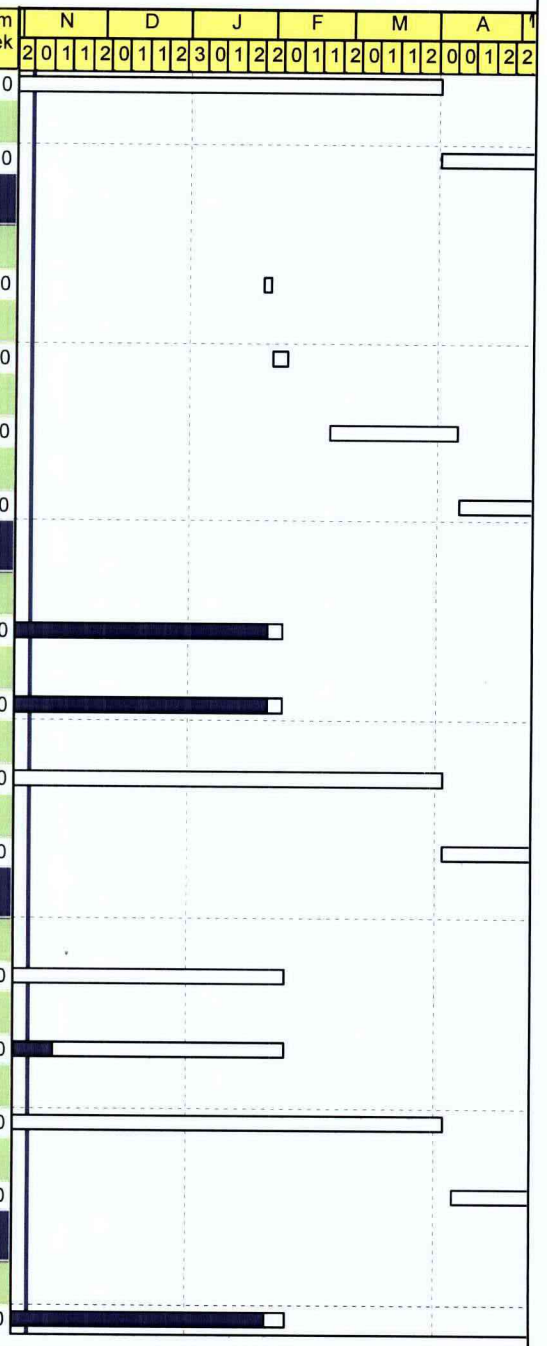
- All field work has been completed for this calendar year, re-start target = Jan 2013.

Attachment 3

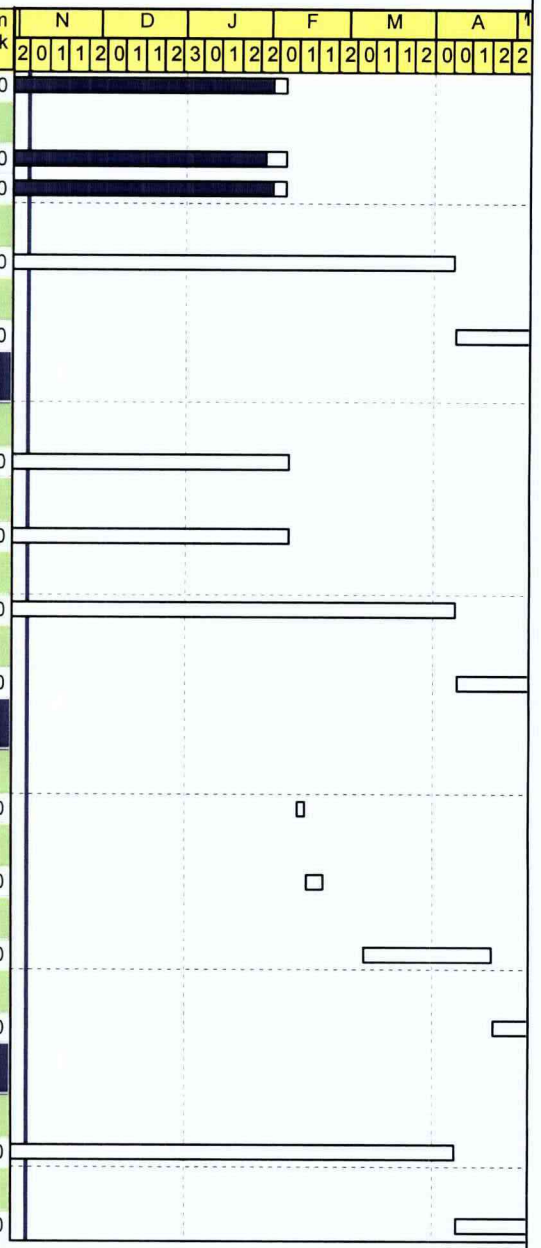
Activity ID	Activity Name	TPA	% Cmpl	RD	Start	Finish	Delta from Last Week
600-356							
Excavation							
IU226010	Excavation 600-356	N	0%	3.0	13-Feb-13*	19-Feb-13	0
Loadout							
IU226020	Loadout 600-356	N	0%	1.0	20-Feb-13	20-Feb-13	0
Closeout Sampling & Docs							
IU226070	Work Instructions 600-356	N	0%	75.0	21-Mar-13	01-Aug-13	0
600-298							
Excavation							
IU2210	Excavation (White Bluffs Review 9 Sites) 600-298	Y	75%	2.0	13-Feb-12 A	17-Jan-13	0
Loadout							
IU2220	Loadout (White Bluffs Review 9 Sites) 600-298	Y	75%	2.0	13-Feb-12 A	17-Jan-13	0
Closeout Sampling & Docs							
IU2280	Closure Sampling 600-298	Y	15%	26.0	17-Apr-12 A	27-Mar-13	0
Final Project Closeout							
IU2290	Prepare Closure Document 600-298	Y	0%	93.0	28-Mar-13	11-Sep-13	0
600-299							
Excavation							
IU222410	Excavation (White Bluffs Review 5 Sites) 600-299	Y	98%	2.0	16-Apr-12 A	22-Jan-13	0
IU22100	Excavation (Shoreline Review 1 Site) 600-299	Y	98%	2.0	08-May-12 A	22-Jan-13	0
Loadout							
IU222420	Loadout (White Bluffs Review 5 Sites) 600-299	Y	98%	2.0	16-Apr-12 A	22-Jan-13	0
IU22110	Loadout (Shoreline Review 1 Site) 600-299	Y	98%	2.0	08-May-12 A	22-Jan-13	0
Closeout Sampling & Docs							
IU22170	Closure Sampling 600-299	Y	60%	26.0	17-Feb-12 A	27-Mar-13	0
Final Project Closeout							
IU22180	Prepare Closure Document 600-299	Y	0%	93.0	28-Mar-13	11-Sep-13	0
600-300							
Excavation							
IU22210	Excavation (White Bluffs Review 12 Sites) 600-300	Y	98%	2.0	08-Mar-12 A	24-Jan-13	0
Loadout							
IU22220	Loadout (White Bluffs Review 12 Sites) 600-300	Y	98%	2.0	08-Mar-12 A	24-Jan-13	0
Closeout Sampling & Docs							



Activity ID	Activity Name	TPA	% Cmpl	RD	Start	Finish	Delta from Last Week
IU22280	Closure Sampling 600-300	Y	20%	26.0	28-Feb-12 A	01-Apr-13	0
Final Project Closeout							
IU22290	Prepare Closure Document 600-300	Y	0%	93.0	02-Apr-13	16-Sep-13	0
600-303							
Excavation							
IU222530	Excavation 600-303	Y	0%	3.0	28-Jan-13*	30-Jan-13	0
Loadout							
IU222540	Loadout 600-303	Y	0%	3.0	31-Jan-13*	05-Feb-13	0
Closeout Sampling & Docs							
IU222600	Closure Sampling 600-303	Y	0%	26.0	21-Feb-13	08-Apr-13	0
Final Project Closeout							
IU222610	Prepare Closure Document 600-303	Y	0%	83.0	09-Apr-13	04-Sep-13	0
600-316							
Excavation							
IU221420	Excavation (Farmstead Review 6 Sites) 600-316	Y	98%	2.0	03-May-12 A	04-Feb-13	0
Loadout							
IU221430	Loadout (Farmstead Review 6 Sites) 600-316 (68 tons)	Y	98%	2.0	03-May-12 A	04-Feb-13	0
Closeout Sampling & Docs							
IU221490	Closure Sampling 600-316	Y	5%	26.0	23-May-12 A	03-Apr-13	0
Final Project Closeout							
IU221500	Prepare Closure Document 600-316	Y	0%	93.0	04-Apr-13	18-Sep-13	0
600-318							
Excavation							
IU222430	Excavation (Farmstead Review 3 Sites) 600-318	Y	70%	1.0	05-Mar-12 A	05-Feb-13	0
Loadout							
IU222440	Loadout (Farmstead Review 3 Sites) 600-318 (114 tons)	Y	70%	1.0	30-Apr-12 A	05-Feb-13	0
Closeout Sampling & Docs							
IU221710	Closure Sampling 600-318	Y	50%	26.0	01-May-12 A	04-Apr-13	0
Final Project Closeout							
IU221720	Prepare Closure Document 600-318	Y	0%	93.0	08-Apr-13	19-Sep-13	0
600-320							
Excavation							
IU222470	Excavation (Farmstead Review 7 Sites) 600-320	Y	98%	1.0	16-Jan-12 A	06-Feb-13	0

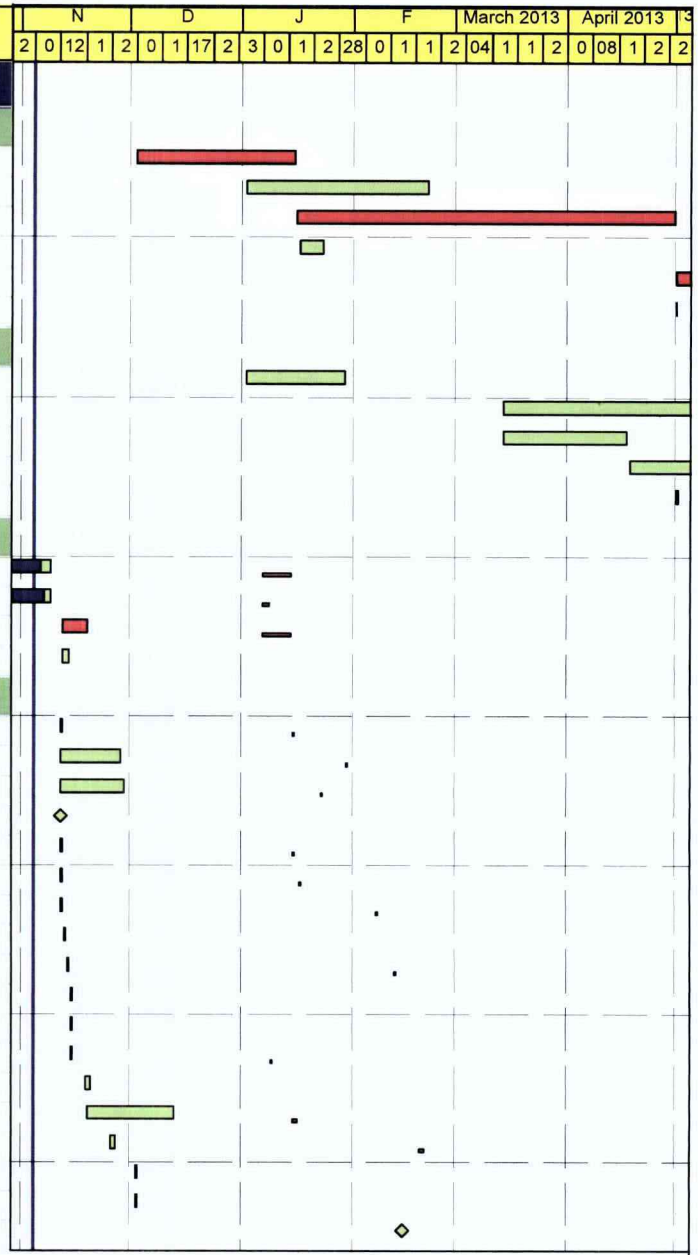


Activity ID	Activity Name	TPA	% Cmpl	RD	Start	Finish	Delta from Last Week
IU222480	Excavation (Shoreline Review 1 Site) 600-320	Y	98%	1.0	16-May-12 A	06-Feb-13	0
Loadout							
IU222490	Loadout (Farmstead Review 7 Sites) 600-320 (766 tons)	Y	98%	1.0	16-Jan-12 A	06-Feb-13	0
IU222500	Loadout (Shoreline Review 1 Site) 600-320 (tons)	Y	98%	1.0	16-May-12 A	06-Feb-13	0
Closeout Sampling & Docs							
IU221930	Closure Sampling 600-320	Y	40%	26.0	14-May-12 A	08-Apr-13	0
Final Project Closeout							
IU221940	Prepare Closure Document 600-320	Y	0%	93.0	09-Apr-13	23-Sep-13	0
600-321							
Excavation							
IU222510	Excavation (Farmstead Review 1 Site) 600-321	Y	50%	1.0	24-May-12 A	07-Feb-13	0
Loadout							
IU222520	Loadout (Farmstead Review 1 Site) 600-321 (177 tons)	Y	50%	1.0	24-May-12 A	07-Feb-13	0
Closeout Sampling & Docs							
IU222040	Closure Sampling 600-321	Y	5%	26.0	24-May-12 A	09-Apr-13	0
Final Project Closeout							
IU222050	Prepare Closure Document 600-321	Y	0%	93.0	10-Apr-13	24-Sep-13	0
600-326							
Excavation							
IU222640	Excavation 600-326	Y	0%	3.0	11-Feb-13*	13-Feb-13	0
Loadout							
IU222650	Loadout 600-326 (2 tons)	Y	0%	3.0	14-Feb-13*	20-Feb-13	0
Closeout Sampling & Docs							
IU222710	Closure Sampling 600-326	Y	0%	26.0	07-Mar-13	22-Apr-13	0
Final Project Closeout							
IU222720	Prepare Closure Document 600-326		0%	83.0	23-Apr-13	18-Sep-13	0
600-328							
Closeout Sampling & Docs							
IU222370	Closure Sampling 600-328	Y	5%	26.0	01-May-12 A	09-Apr-13	0
Final Project Closeout							
IU222380	Prepare Closure Document 600-328	Y	0%	93.0	10-Apr-13	24-Sep-13	0



Attachment 4

Activity ID	Activity Name	% Cmpl	RD	Start	Finish
100 D					
Excavation					
100D100A343	Excavate 100-D-100: Tier 3 Phase 1 (84,000 BCM)	0%	23	03-Dec-12*	15-Jan-13
100D100A393	Excavate Contaminated Stockpile Area	0%	29	02-Jan-13*	21-Feb-13
100D100A311A	Excavate 100-D-100: Tier 3 Phase 2 (178,000 BCM)	0%	59	16-Jan-13	30-Apr-13
CBB0534A	Excavate 100-D-81 (2,417 BCM)	0%	4	17-Jan-13	23-Jan-13
100D100A311B	Excavate 100-D-100: Tier 3 Phase 3 (76,000 BCM)	0%	41	01-May-13	15-Jul-13
CBB0540A	Excavate 100-D-83:2 (No Action, Remediates with D-100)	0%	0	01-May-13	01-May-13
Loadout					
100D100A383	LDR Staging Area for 100-D-100 Tier 3	0%	16	02-Jan-13*	29-Jan-13
100D100A312	Loadout 100-D-100 Tier 3 (MHVs - 183,693 tons)	0%	92	14-Mar-13	26-Aug-13
100D100A313	Loadout 100-D-100 Tier 3 (Blue Dot Cans - 20,039 tons)	0%	20	14-Mar-13	17-Apr-13
100D100A372	Loadout 100-D-100 Tier 3 (LDR - 130,255 tons)	0%	162	18-Apr-13	10-Feb-14
CBB0540B	Loadout 100-D-83:2 (Remediated with another site)	0%	1	01-May-13	01-May-13
Backfill					
CBC0605C	Backfill - 118-D-2 (64,396 BCM)	90%	4	11-Oct-12 A	09-Nov-12
CBB0403CAUW	Backfill - 100-D-56 (9,209 BCM)	80%	4	30-Oct-12 A	09-Nov-12
RD10D81400	Backfill - 100-D-8 (4 DAYS RE-CONTOURING)	0%	4	12-Nov-12*	19-Nov-12
CBB0507C	Backfill - 116-DR-5 (3,526 BCM)	0%	1	12-Nov-12	14-Nov-12
Revegetation					
CBC0505E	Revegetation - 116-DR-10	0%	1	12-Nov-12	12-Nov-12
CBC0605E	Revegetation - 118-D-2	0%	9	12-Nov-12	28-Nov-12*
CBC0606E	Revegetation - 118-D-3	0%	10	12-Nov-12	29-Nov-12*
DMSR12	2012 100-D Reveg Campaign	0%	0	12-Nov-12*	
CBB0502E	Revegetation - 100-D-3	0%	1	12-Nov-12*	12-Nov-12
CBB0505E	Revegetation - 100-D-61	0%	1	12-Nov-12	12-Nov-12
CBB0602E	Revegetation - 100-D-33	0%	1	12-Nov-12	12-Nov-12
CBB0603E	Revegetation - Rem BG - 100-D-35	0%	1	13-Nov-12	13-Nov-12
CBB0604E	Revegetation - 100-D-41	0%	1	14-Nov-12	14-Nov-12
100D14A280	Revegetation - 100-D-14	0%	1	15-Nov-12*	15-Nov-12
CBB0605E	Revegetation - Rem BG - 100-D-45	0%	1	15-Nov-12	15-Nov-12
CBB0403E	Revegetation - 100-D-56:2	0%	1	15-Nov-12*	15-Nov-12
CBB0606E	Reveg - Rem BG - 126-D-2, 3.16 acres	0%	2	19-Nov-12	20-Nov-12
RD10D81500	Revegetation - 100-D-8	0%	13	19-Nov-12*	13-Dec-12
CBC0502E	Revegetation - 116-D-8	0%	2	26-Nov-12	27-Nov-12
CBC0607E	Revegetation - Rem BG - 118-D-4	0%	1	03-Dec-12*	03-Dec-12
CBC0608E	Reveg - Rem BG - 118-D-5	0%	1	03-Dec-12	03-Dec-12*
DMS060	100-D Reveg Window Closed	0%	0		14-Feb-13*



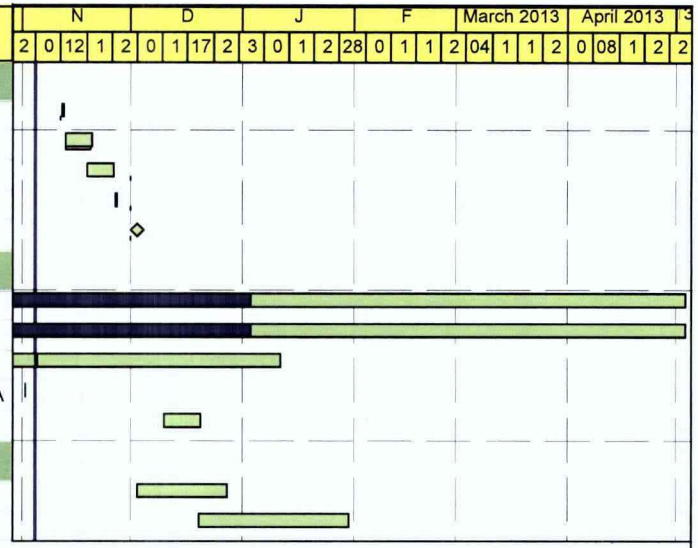
SPIF Bar | Remaining Work | Critical Remaining Work
Actual Work | Actual Critical Work | Remaining Level of Effort

Data Date: 05-Nov-12

CPP 100-D - Current - After FR487...

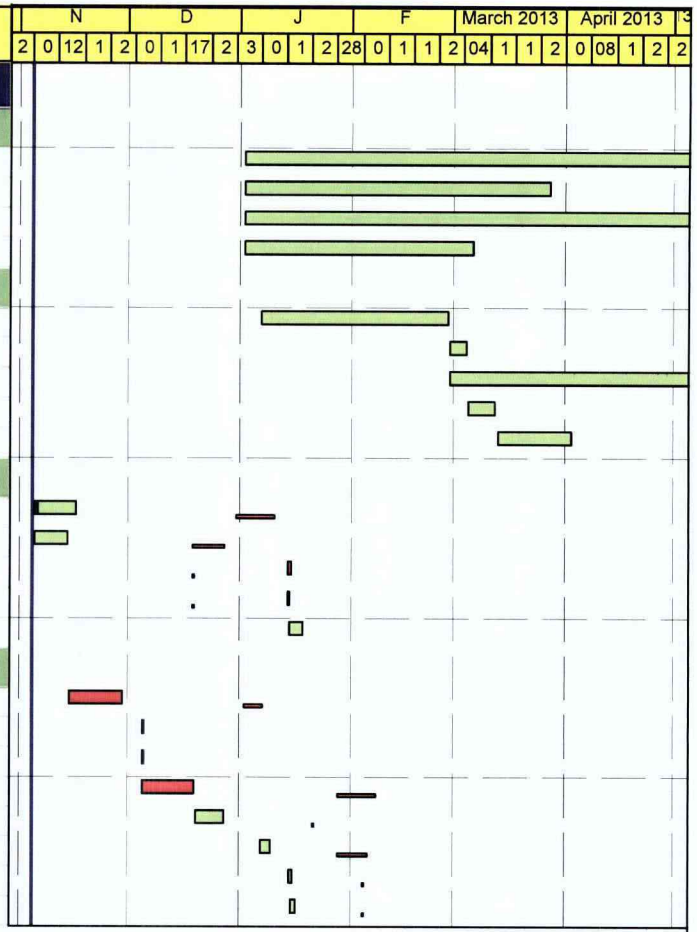
TASK filter: 100-DH POW Content.

Activity ID	Activity Name	% Cmpl	RD	Start	Finish
Mobilization					
RDNSSETC5	Pre-Mobilization "Trainathon"	0%	1	12-Nov-12*	12-Nov-12*
RDNSSETC4	Subcontractor Mobilization	0%	5	13-Nov-12*	20-Nov-12*
RDNSSETC3	Trailer Mobilization & Setup	0%	3	19-Nov-12*	26-Nov-12
RDNSSETC6	Full Crew "Trainathon"	0%	1	27-Nov-12*	27-Nov-12*
RDNSSETC7	Start Field Work (TPMC / Envirocon Subcontract # C029453A00)	0%	0	03-Dec-12*	
Utilities (Electrical)					
100D100A368	13.8 kV Construction	40%	180	15-Oct-12 A	03-May-13
100D100A333	Power Pole Relocation (Field Work)	40%	180	15-Oct-12 A	03-May-13
100D100A369	230 kV Construction	1%	68	23-Oct-12 A	11-Jan-13
100D100A370	13.8 kV Outage	100%	0	02-Nov-12 A	02-Nov-12 A
100D100A371	230 kV Outage	0%	11	10-Dec-12*	20-Dec-12
Utility Isolations					
100D100A363	Well Decommissioning @ 100-D (REA-184) 8 wells	0%	14	03-Dec-12*	27-Dec-12
100D100A373	Well Replacement @ 100-D (REA-184) 4 wells	0%	21	20-Dec-12*	30-Jan-13



Attachment 5

Activity ID	Activity Name	% Cmpl	RD	Start	Finish
100 H					
Special Projects					
HB512A7	Reroute Pump & Treat Lines (100-H REA 138)	0%	90	02-Jan-13*	11-Jun-13
HB512A1	Power Line Relocation (100-H REA 138)	0%	48	02-Jan-13*	27-Mar-13
HB512A2	Reroute Export Water Line (100-H REA 138)	0%	90	02-Jan-13*	11-Jun-13
HB512A3	Well Decommissioning (100-H REA 138)	0%	36	02-Jan-13*	06-Mar-13
Excavation					
HB511A013	Excavate 100-H-28:2 Phase 2 - Section A - Under Power Lines...	0%	30	07-Jan-13*	27-Feb-13
HB512A	Excavate 100-H-28:3 Section A - Export Water Line (5,000 BCM)	0%	2	28-Feb-13*	04-Mar-13
HB511A04	Excavate 100-H-28:2 Phase 2 - Section B - All Else (137,898 B...	0%	65	28-Feb-13	24-Jun-13
HB512A5	Excavate 100-H-28:3 Section B - Power Line (12,500 BCM)	0%	5	05-Mar-13*	12-Mar-13
HB512A6	Excavate 100-H-28:3 Section C - All Else (30,612 BCM)	0%	12	13-Mar-13*	02-Apr-13
Backfill					
HB506C	Backfill - 126-H-2 (34,000 BCM)	10%	8	05-Nov-12 A	16-Nov-12
HB510C1	Backfill - 132-H-3 (17,652 BCM)	0%	6	05-Nov-12	14-Nov-12
HB504C1	Backfill - 118-H-6:4 (~1,300 BCM, 20%)	0%	1	14-Jan-13*	15-Jan-13
HB5045C	Backfill - 118-H-6:5 (2,180 BCM)	0%	1	14-Jan-13	14-Jan-13
HB505C1	Backfill - 100H Mud Dauber (3 Days Recontouring)	0%	3	14-Jan-13	18-Jan-13
Revegetation					
HC504E2	Revegetation - 128-H-1 (15.44 acres)	0%	7	15-Nov-12*	29-Nov-12
HC604E20	Revegetation - 118-H-4 (less than 1.0 acre)	0%	1	05-Dec-12*	05-Dec-12
HB404E20	Revegetation - 116-H-9 (less than 1.0 acre)	0%	1	05-Dec-12*	05-Dec-12
HB510E1	132-H-3 Revegetation	0%	9	05-Dec-12	19-Dec-12
HB507E2	Revegetation - 1607-H3 (6.59 acres)	0%	3	20-Dec-12	27-Dec-12
HB505E20	Revegetation - 100H Mud Dauber (7 acres)	0%	3	07-Jan-13	09-Jan-13
HB5045E20	Revegetation - 118-H-6:5 (less than 1.0 acres)	0%	1	14-Jan-13	15-Jan-13
HB504E20	Revegetation - 118-H-6:4 (less than 1.0 acre)	0%	1	15-Jan-13	16-Jan-13



SPIF Bar | Remaining Work | Critical Remaining Work
Actual Work | Actual Critical Work | Remaining Level of Effort

Attachment 6

100 Area D4/ISS Status
November 8, 2012

100-N

River Structures – Re-contouring of the benches to a 4:1 slope complete on October 29, 2012.

105-N/109-N Reactor/Heat Exchanger Buildings (ISS) – ISS is complete. Ecology responded in agreement on November 1 to completion of the Tri-Party Agreement Milestone M-093-020 "Complete 105-N Reactor Interim Safe Storage".

1904-N Sanitary Sewer Lagoon and Lift Station No. 1 – MSA continues to de-water the lagoons in preparation for desludging activities. Currently working to award a subcontract to desludge the lagoons in preparation for demolition and disposal of the 1904-N under CERCLA.

1904-NB and 1904-NC Sanitary Sewer Lift Stations – Residual water has been removed from facilities. Preparations for demolition will resume soon.

100-N Miscellaneous Items – Continuing with D4 activities associated with completion of work on the West side of the 105-N in preparation for turnover of the area to Field Remediation. Removal and disposition of miscellaneous materials and equipment from around the site continue in preparation for D4 demobilization from 100-N.

100-D

183-D Water Treatment Plant – Currently working to decontaminate and downpost a portion of the facility from Beryllium controls. Asbestos sampling has been completed, preparation of the inspection report and asbestos abatement/demolition plan summary for EPA approval is currently underway. Scheduled to begin hazmat removal soon.

151-D Electrical Substation – Timeline for cold and dark of the facility has been extended. Characterization activities are on hold until the cold and dark has been completed.

100-B

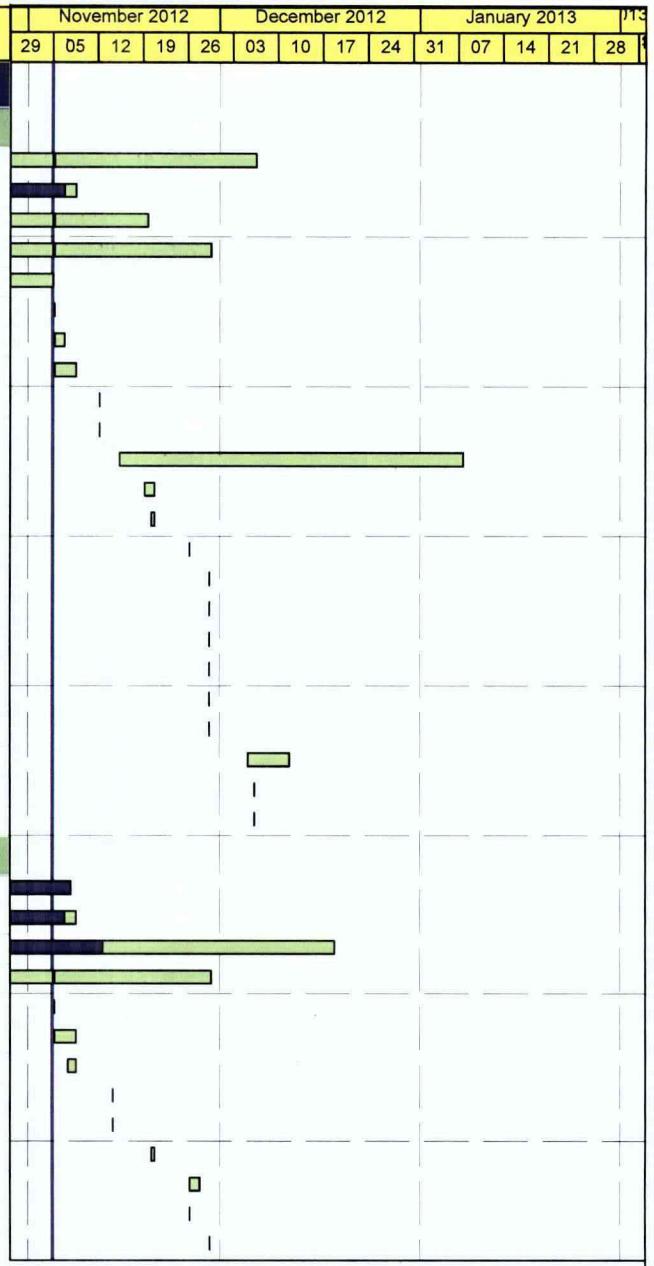
105-B Reactor Fuel Transfer Pit Sediment Removal – Assisting WCH Surveillance Maintenance and Utilities by supplying technical support in preparation for removal of sediment in the fuel transfer pits of the 105-B Reactor Fuel Storage Basin.

105-B Reactor Washpad Annex – Poor structural condition of the facility roof complicates entry for characterization. Planning is underway for characterization sampling and surveys.

151-B Electrical Substation – Asbestos sampling and radiological and industrial hygiene surveys continue in support of characterization of facility.

Attachment 7

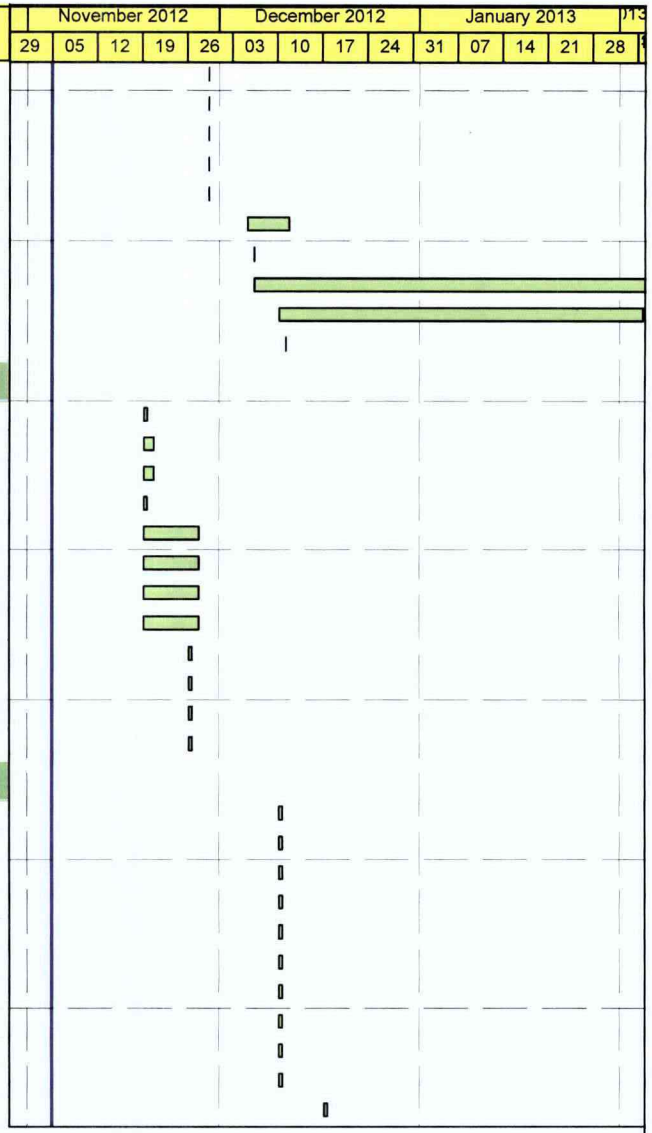
Activity ID	Activity Name	% Cmpl	RD	Start	Finish
FY10-11 CPP 100-N AREA CURRENT FR-455/460					
Excavation					
NB578A10	D4 Excavation - 100-N-63 (30,140 BCMs)	90%	18	03-Feb-11 A	06-Dec-12
NB540A10	Plume Excavation - 128-N-1 (500 BCMs)	95%	4	01-Oct-12 A	08-Nov-12
NB525A31	Excavtn -100-N-61:4 (CDD) (25K BCM)	50%	9	08-Oct-12 A	19-Nov-12
NB534A	Excavation - 124-N-1 (11 BCMs)	25%	14	15-Oct-12 A	29-Nov-12
NB552D20	Plume Excavation - UPR-100-N-18 and UPR-100-N-20	10%	26	23-Oct-12 A	20-Dec-12
NB521D53	100-N-57 Plume Excavation	0%	4	05-Nov-12*	08-Nov-12
NB532A10	Plume Excavation - 120-N-3 (500 BCMs)	0%	2	05-Nov-12*	06-Nov-12
NB536A10	Plume Excavation - 124-N-2 (500 BCMs)	0%	4	05-Nov-12*	08-Nov-12
NB567A	Excavation - UPR-100-N-35 (741 BCMs)	0%	2	12-Nov-12*	13-Nov-12
NB568A10	Plume Excavation - UPR-100-N-36 (500 BCM)	0%	2	12-Nov-12*	13-Nov-12
NB541A10	Plum Excavation - 130-N-1 (30,000 BCMs)	0%	25	15-Nov-12*	07-Jan-13
NB507A10	Plume Excavation - 100-N-23 (500 BCMs)	0%	2	19-Nov-12*	20-Nov-12
R120N17	Excavation - 120-N-7 (10 BCMs)	0%	1	20-Nov-12*	20-Nov-12
NB529D037	116-N-4 Plume Excavation	0%	2	26-Nov-12*	27-Nov-12
NB517A	Excavation - 100-N-36 (11 BCMs)	0%	9	29-Nov-12*	13-Dec-12
NB537A	Excavation - 124-N-3 (0 BCMs)	0%	9	29-Nov-12*	13-Dec-12
NB546A	Excavation - UPR-100-N-10 (0 BCMs)	0%	9	29-Nov-12*	13-Dec-12
NB548A	Excavation - UPR-100-N-12 (0 BCMs)	0%	9	29-Nov-12*	13-Dec-12
NB563A	Excavation - UPR-100-N-3 (0 BCMs)	0%	9	29-Nov-12	13-Dec-12
NB575A	Excavation - UPR-100-N-7 (0 BCMs)	0%	1	29-Nov-12*	29-Nov-12
NB5A7A	Excavation - 100-N-35	0%	4	05-Dec-12	11-Dec-12
NB553A10	Plume Excavation - UPR-100-N-19 (500 BCMs)	0%	2	06-Dec-12*	10-Dec-12
NB578A20	100-N-63:2 Plume Excavation	0%	40	06-Dec-12*	20-Feb-13
Loadout					
NB578B30	D4 Loadout - 100-N-63 CDD	90%	18	21-Feb-12 A	06-Dec-12
NB540B10	Plum Loadout - 128-N-1 (1000 USTs)	95%	4	02-Oct-12 A	08-Nov-12
NB525B21	Loadout - 100-N-61:4 (CDD) (40K TONS)	50%	24	08-Oct-12 A	18-Dec-12
NB534B	Loadout - 124-N-1 (0 USTs)	25%	14	15-Oct-12 A	29-Nov-12
NB521D33	100-N-57 Plume Loadout	0%	4	05-Nov-12*	08-Nov-12
NB536B10	Plume Loadout - 124-N-2 (1000 USTs)	0%	4	05-Nov-12*	08-Nov-12
NB532B20	Plume Loadout - 120-N-3 (1000 USTs)	0%	2	07-Nov-12*	08-Nov-12
NB567B	Loadout - UPR-100-N-35 (407 USTs)	0%	2	14-Nov-12*	15-Nov-12
NB568B20	Plume Loadout - UPR-100-N-36 (1000 USTs)	0%	2	14-Nov-12*	15-Nov-12
R120N27	Loadout - 120-N-7 (0 USTs)	0%	1	20-Nov-12*	20-Nov-12
NB507B10	Plume Loadout - 100-N-23 (1000 USTs)	0%	2	26-Nov-12*	27-Nov-12
NB529D017	116-N-4 Plume Loadout	0%	2	26-Nov-12*	27-Nov-12
NB517B	Loadout - 100-N-36 (11 USTs)	0%	9	29-Nov-12*	13-Dec-12



Actual Work ◇ ◇ Milestone ◆ ◆ Actual Milestone
Remaining Work % Complete

Data Date: 05-Nov-12

Activity ID	Activity Name	% Cmpl	RD	Start	Finish
NB537B	Loadout - 124-N-3 (0 USTs)	0%	9	29-Nov-12*	13-Dec-12
NB546B	Loadout - UPR-100-N-10 (0 USTs)	0%	9	29-Nov-12*	13-Dec-12
NB548B	Loadout - UPR-100-N-12 (0 USTs)	0%	9	29-Nov-12*	13-Dec-12
NB563B	Loadout - UPR-100-N-3 (0 USTs)	0%	9	29-Nov-12	13-Dec-12
NB575B	Loadout - UPR-100-N-7 (0 USTs)	0%	1	29-Nov-12*	29-Nov-12
NB5A7B	Loadout - 100-N-35	0%	4	05-Dec-12	11-Dec-12
NB578A30	100-N-63:2 Plume Loadout	0%	45	06-Dec-12*	28-Feb-13
NB578B60	Loadout - 100-N-63 AUW Quantities FY12	0%	42	06-Dec-12*	25-Feb-13
NB552D10	Plume Loadout - UPR-100-N-18 and UPR-100-N-20	0%	30	10-Dec-12*	04-Feb-13
NB553B10	Plume Loadout - UPR-100-N-19 (1,000 USTs)	0%	2	11-Dec-12*	12-Dec-12
Backfill					
NB501C	Backfill - 100-N-13 (822 BCMs)	0%	1	19-Nov-12*	19-Nov-12
NB502C	Backfill - 100-N-14 (0 BCMs)	0%	2	19-Nov-12*	20-Nov-12
NB504C	Backfill - 100-N-17 (0 BCMs)	0%	2	19-Nov-12*	20-Nov-12
NB505C	Backfill - 100-N-18 (174 BCMs)	0%	1	19-Nov-12*	19-Nov-12
NB516C	Backfill - 100-N-34 (13,131 BCMs)	0%	4	19-Nov-12*	27-Nov-12
NB538C	Backfill - 124-N-4 (26,809 BCMs)	0%	4	19-Nov-12*	27-Nov-12
NB516C10	Backfill - 100-N-34 AUW	0%	4	19-Nov-12*	27-Nov-12
NB538C10	Backfill - 124-N-4 AUW	0%	4	19-Nov-12*	27-Nov-12
NB506C	Backfill - 100-N-22 (41 BCMs)	0%	1	26-Nov-12*	26-Nov-12
NB515C	Backfill - 100-N-33 (221 BCMs)	0%	1	26-Nov-12*	26-Nov-12
NB520C	Backfill - 100-N-47 (9776 BCMs)	0%	1	26-Nov-12*	26-Nov-12
NB542C	Backfill - 1908-N (1,732 BCMs)	0%	1	26-Nov-12*	26-Nov-12
Revegetation					
NB501E	Revegetation - 100-N-13 (0.2 acres)	0%	1	10-Dec-12*	10-Dec-12
NB502E	Revegetation - 100-N-14 (0 acres)	0%	1	10-Dec-12	10-Dec-12
NB504E	Revegetation - 100-N-17 (0 acres)	0%	1	10-Dec-12	10-Dec-12
NB505E	Revegetation - 100-N-18 (0.05 acres)	0%	1	10-Dec-12*	10-Dec-12
NB506E	Revegetation - 100-N-22 (0 acres)	0%	1	10-Dec-12*	10-Dec-12
NB515E	Revegetation - 100-N-33 (.12 acres)	0%	1	10-Dec-12*	10-Dec-12
NB516E	Revegetation - 100-N-34 (2 acres)	0%	1	10-Dec-12*	10-Dec-12
NB520E	Revegetation - 100-N-47 (1.29 acres)	0%	1	10-Dec-12*	10-Dec-12
NB538E	Revegetation - 124-N-4 (1.25 acres)	0%	1	10-Dec-12*	10-Dec-12
NB544E	Revegetation - 600-35 (0.57 acres)	0%	1	10-Dec-12*	10-Dec-12
NB547E	Revegetation - UPR-100-N-11 (1.1 acres)	0%	1	17-Dec-12*	17-Dec-12



Actual Work ◇ Milestone ◆ Actual Milestone
Remaining Work % Complete

Data Date: 05-Nov-12

Attachment 8

Elevated Total Organic Carbon Concentrations in Well 199-N-165
– Draft –

Current Conditions:

- Elevated TOC concentrations were observed in samples from well 199-N-165 (Figure 1) in September 2011 and November 2011 (Table 1)
- Current TOC concentrations in samples from March 2012 and September 2012 are consistent with "pre-elevated" concentrations in samples from September 2010 and March 2011
- The statistical comparison value for TOC is the larger of either the critical mean or the limit of quantitation (LOQ) (Table 1)

Table 1. Total Organic Carbon Results for Well 199-N-165 at 1324-N/NA

Sample Date	TOC Critical Mean/LOQ (µg/L)	TOC Results (µg/L)
Sep 2010	870/**990**	818 to 849
Mar 2011	**860**/210	524 to 638
Sep 2011	**860**/670	2,920 to 3,370
Nov 2011	860/**1620**	6,800 to 6,900
Mar 2012	679/**930**	864 to 918
Sep 2012	679/**850**	744 to 780

Previous Elevated TOC Concentrations:

- September 1997: TOC concentrations in well 199-N-59 exceeded the critical mean concentration of 1,373 µg/L
  - Conclusion:
    - No organic waste constituents were documented going to 1324-N/NA
    - Other potential sources of organic contamination include fuel tanks and spills
    - High river stage caused a reversal in the groundwater gradient, resulting in 199-N-59 being temporarily upgradient
  - Appendix A of the 1999 annual report (PNNL-13116, page A.3) states *"Ecology has agreed that the contamination is from another source so assessment monitoring is not required."*
- March 2009: TOC concentrations in well 199-N-165 (replacement for well 199-N-59) exceeded the critical mean concentration of 834 µg/L
  - Conclusion:
    - 1324-N/NA is not the source for the elevated TOC concentrations.
    - According to a letter provided to Ecology, *"The groundwater quality assessment consists of our determination that the 1324-N/NA units is not a source of dangerous constituents contributing to the elevated TOC. The waste discharged to the 1324-N/NA units contained sulfuric acid and sodium hydroxide and was designated "dangerous" because of the characteristic of corrosivity. No organic waste constituents were disposed at these TSD units; therefore, elevated TOC cannot indicate dangerous constituents derived from these TSD units."*

Recent Investigation:

In accordance with the letter from DOE-RL to Ecology dated December 28, 2011 (12-AMCP-0041, Groundwater Indicator Parameter Exceedance at 1324-N/NA), DOE-RL planned additional sampling and analyses to evaluate and confirm the source of the elevated TOC concentrations. Sampling was planned for March 2012, the next RCRA sampling period at 1324-N/NA, at the five RCRA wells (199-N-165, 199-N-71, 199-N-72, 199-N-73, and 199-N-77) and three CERCLA wells (199-K-182, 199-N-189, and 199-K-164). An expanded analyte list was selected to test for the presence of constituents that could help identify the potential source of the TOC: Field parameters (pH, specific conductance, temperature, turbidity, dissolved oxygen, and oxidation-reduction potential), Total Organic Carbon (TOC), Total Organic Halides (TOX), Metals (filtered and unfiltered), Anions, Alkalinity, VOAs, SVOAs, PAHs, TPH-Diesel, and TPH-Gasoline.

Sampling has been completed for the five RCRA wells and two CERCLA wells (199-K-182 and 199-K-189) for the expanded analyte list. CERCLA well 199-K-164 was not sampled because it is in use as an injection well for the KX pump-and-treat system. Data from an additional two CERCLA wells (199-K-151 and 199-K-152) were also included in this evaluation. The analytes were sampled at these wells as described below:

- Total coliform was also analyzed for all wells;
- SVOA PAH was analyzed, but not SVOA;
- TOC and TOX were not analyzed for the 100 K wells (TOC will be sampled in October);
- ORP was not analyzed for wells 199-N-71, 199-N-72, 199-N-73, 199-N-77;
- DO was not analyzed for wells 199-N-72, 199-N-73, 199-N-77;
- CERCLA well 199-N-189 was sampled in April for all of the analytes on the expanded list except TOC, TOX, and total coliform;
- CERCLA well 199-K-182 was sampled in June 2010, September 2010, and January 2011 as part of the spatial and temporal groundwater sampling for the RI;
- CERCLA well 199-K-164 is in use as a KW pump-and-treat injection well and is not scheduled for sampling; and
- CERCLA wells 199-K-151 and 199-K-152 were included in the evaluation.

The analytical results from this sampling are provided in Table 2.

The analytical results indicate that the elevated TOC is not based on the presence of a regulated, hazardous substance:

- The only VOA that was detected in any of the wells was chloroform, and it was detected in all wells (maximum concentration 5 µg/L)
- The only PAH detected was anthracene, and it was detected only in well 199-N-71 (the upgradient well) and well 199-N-165 (maximum concentration 0.054 µg/L)
- There were no detections of coliform bacteria (i.e., septic releases do not appear to the source).
- There were no detections of TPH-diesel or TPH-gasoline (i.e., fuel spills do not appear to the source).
- Although PCBs were not analyzed in these samples, there have been no detection of PCBs in groundwater in the 100-N Area.

Conclusion:

- Previous elevated concentrations of TOC (1997 and 2009) were not attributed to 1324-N/NA because no organic waste constituents were disposed to these TSD units.
- During the elevated TOC concentrations in 1997 and 2011, wells 199-N-59/199-N-165 may have been "upgradient" of 1324-N/NA due to groundwater gradient reversals during high river stage and/or local mounding from the KW pump-and-treat injection wells (199-K-159 and 199-K-160) (Figure 2).
- The elevated TOC concentrations have declined to "pre-elevated" conditions.
- The source for the elevated TOC is not a VOA or a PAH, is not related to septic releases (coliform bacteria), fuel spills (TPH-diesel or TPH-gasoline), or PCBs.
- The source for the elevated TOC is not attributed to 1324-N/NA, which received no organic waste constituents.

Based upon the available information, the elevated TOC concentrations are not attributed to the 1324-NA Percolation Pond and the 1324-N Surface Impoundment (Waste Sites 120-N-1 and 120-N-2).

Table 2. Summary of Analytical Results for Sampling Conducted to Evaluate Elevated TOC in Well 199-N-165

Well	TOC	TOX	VOA	PAH	Coliform	TPH-D	TPH-G
			Chloroform	Anthracene			
	µg/L	µg/L	µg/L	µg/L	Colonies/100 mL	µg/L	µg/L
199-N-71	208-228 B	10.1B	2.30 J	0.053 J	1.0 U	70 U	50 U
199-N-72	414-430	6.27-8.64 B, 16.6	4.30 J	ND	1.0 U	70 U	50 U
199-N-73	343-361	13.5 B, 13.5 B, 15.6, 17.6	5.0	ND	1.0 U	70 U	50 U
199-N-77	321	10.5	4.9 J	ND	1.0 U	70 U	50 U
199-N-165	891-914	13.0 B, 13.3 B, 16.4, 19.1	5.0	0.054 J	1.0 U	70 U	50 U
199-K-151	NM	NM	3.30J	ND	1.0 U	70 U	50 U
199-K-152	NM	NM	1.80J	ND	1.0 U	80 U	50 U
199-K-182	NM	NM	1.1	1 U	NM	220 UJ	50 U
199-N-189	NM	NM	2.0	0.03 J	NM	70 U	50 U

Flags: J = value is estimated
B = value is less than the contractually required detection limit, but greater than the method detection limit
U = not detected
NM = not measured
VOA = volatile organic analyte
PAH = polyaromatic hydrocarbon
TOC = total organic carbon
TOX = total organic halides
TPH-D = total petroleum hydrocarbon-diesel range
TPH-G = total petroleum hydrocarbon-gasoline range

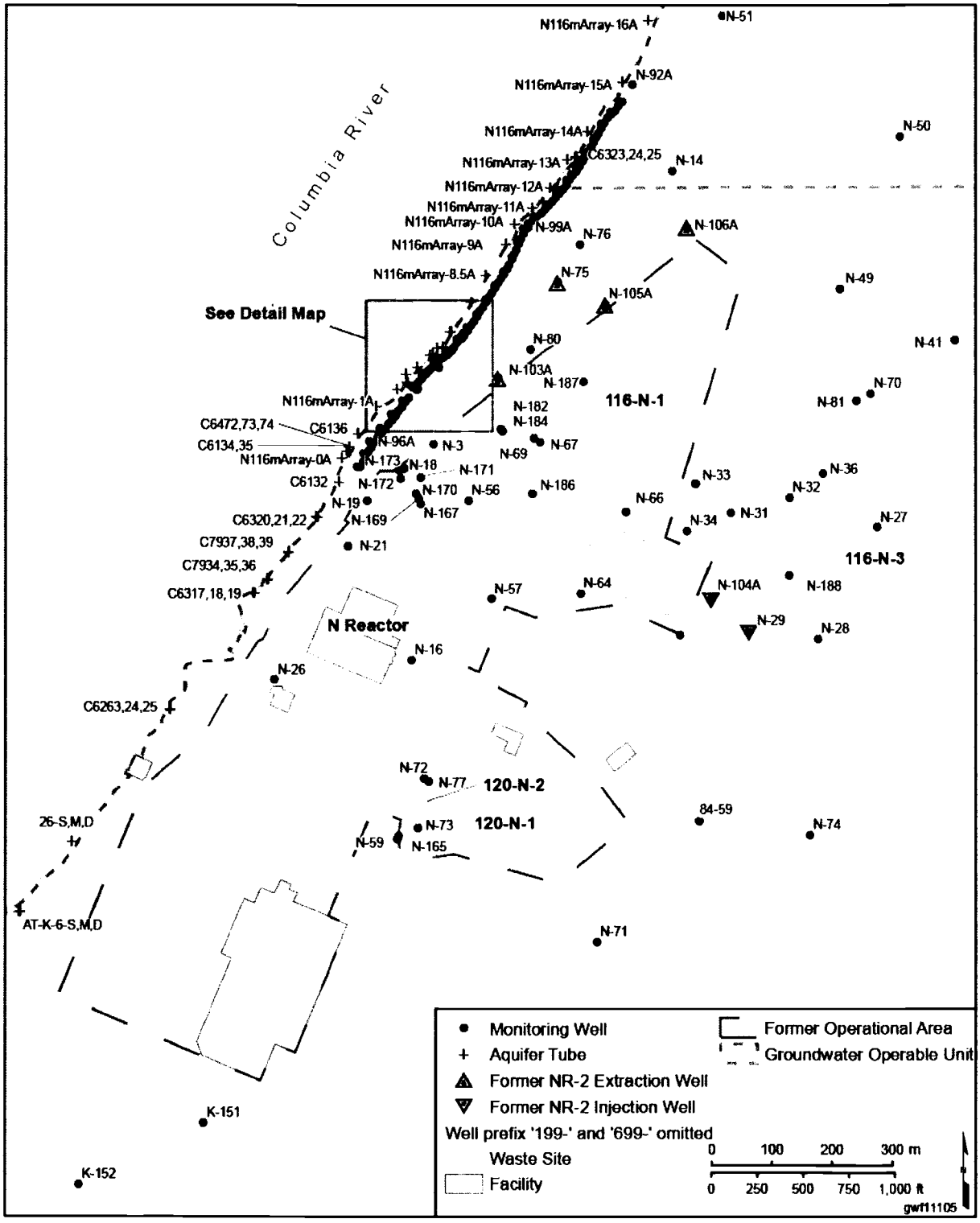


Figure 1. Location of 1324-N/NA (120-N-1 and 120-N-2) Waste Site and Monitoring Wells

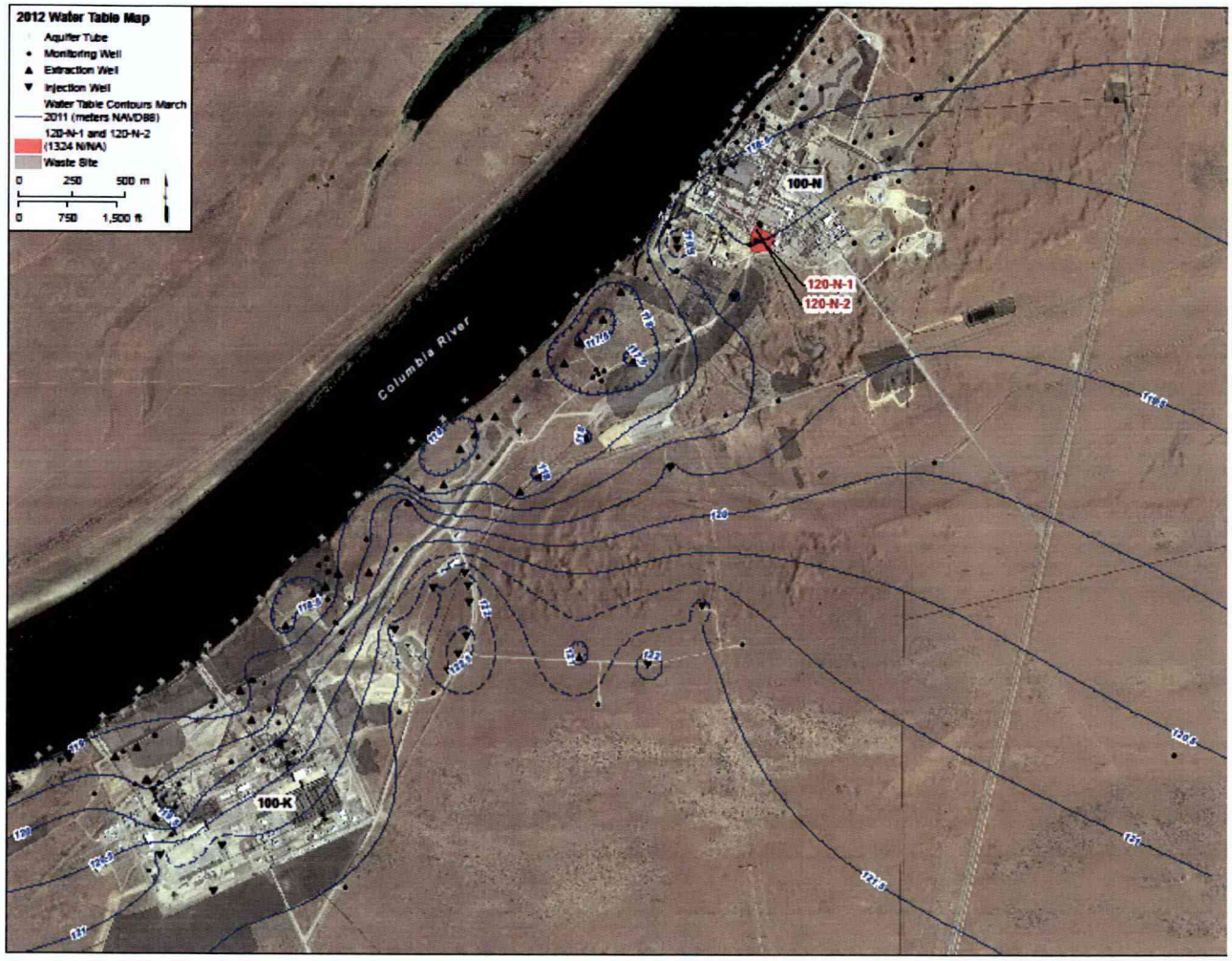


Figure 2. Water Table Map for 2012.

Attachment 9

100-N ANCILLARY FACILITIES REMOVAL ACTION SAMPLING DETERMINATION FORM

Determination Number
SDF-100N-020 Rev.1

A. INSTRUCTIONS

This form must be completed to: 1) document existing data in order to determine if current data is suitable to prove completion of 100-N Ancillary Facilities, or 2) document that site-specific sampling and analyses are needed to provide completion for 100-N Ancillary Facilities.

B. GENERAL INFORMATION

Building Name: Water Supply Tanks

Building Number: 1900-N

WIDS Sites Associated or Adjacent:
- 100-N-7 (Not Accepted)
- 100-N-61:4 (Accepted)
- 100-N-84:1, 3, 4, 7 (Accepted, colon 7 was reclassified as No Action)

Other:
The 1900-N facility consisted of a concrete silo, four above-grade steel tanks, and associated pipelines (BHI-00221 pg. 3-113 & SIS Facility Summary Report for 1900-N). The four tanks consisted of the After Heat Removal Water Storage Tank, the Demineralized Water Storage Tank, the Filtered Water Storage Tank, and the Emergency Raw Water Storage Tank (BHI-00221 pg. 3-113 & SIS Facility Summary Report for 1900-N). The 1900-N facililty received water from, and supplied water to, the 105-N Reactor and various reactor process systems (BHI-00221 pg. 3-113 & SIS Facility Summary Report for 1900-N).

Demolition of the above grade portions of the 1900-N facility occurred from April to August of 2005 (EL-1589 pgs. 5-98). The silo, four tanks, and associated above-grade piping were removed and the footprint was backfilled with approximately 18 inches of clean soil (CCN 123355 pgs. 1 & 2). Demolition debris were disposed of at the Environmental Restoration Disposal Facility (ERDF) (CCN 123355 pg. 2).

A second demolition effort was performed at the 1900-N facility in May-July of 2012 to remove the concrete tank foundations, below-grade piping, and contaminated soils (oil stained sands) that were previously left in place. The foundations were entirely removed and portions of the below-grade piping and adjacent contaminated soils within the layback of the excavation were removed. The Field Remediation (FR) organization will remove all residual portions of the below-grade piping that weren't removed by the D4 organization.

C. INFORMATION SOURCES

Available information (list document number for each if applicable):

Historical Site Assessment: N/A

Site Walkdown: Visual Inspection of 1900-N excavation soils: CCN 166744

IH Characterization Report: N/A

Radiological Survey: Global Positioning Environmental Radiological Surveyor (GPERS) Surveys: ESR-FRM-05-0188C ESRFRM120113C

IHC/FHC Document:
- 100-N Ancillary Facilities Preliminary Hazard Classification: CCN 095435
- Initial Hazard Categorization (IHC) Documentation Form for 1900-N: IHC-2005-0005

WIDS/SIS:
- RCC Stewardship Information System (SIS) Facility Summary Report for 1900-N

PDSR: N/A

Facility Inspection: Facility Inspection Summary for 1900-N Water Supply Tanks: CCN 116918

Waste Characterization Checklist: N/A

Summary Report: Status of the 1900-N Tanks at Completion of D & D Activities: CCN 123355

Other:
- Environmental Restoration Disposal Facility Waste Profile Datasheet for 1900-N, Rev. 2: WP-1900N001
- ERC Surveillance Report on Asbestos Spill Clean Up at 1900-N: SH-2005-S-014
- Logbook for 1900-N Demolition: EL-1589

100-N ANCILLARY FACILITIES REMOVAL ACTION SAMPLING DETERMINATION FORM

Determination Number
SDF-100N-020 Rev.1

- "Pre-Existing" Conditions Survey of Hanford Site Facilities Phase II, Rev. 0: BHI-00221
- Radiological Survey Records: RSR-100SMT-04-0291 & RSR-107N-05-0353
- Photographs of the 1900-N Facility Pre-Demolition, No Time Stamp: SIS Facility Summary Report for 1900-N pgs. 4-11
- Photographs of the 1900-N Facility Demolition, Time-Stamped: SIS Facility Summary Report for 1900-N pgs. 12 & 13 (4/28/2005)
- Photograph of the 1900-N Facility Post-Demolition, No Time Stamp: SIS Facility Summary Report for 1900-N pg. 14
- Photograph of the 1900-N Facility Post-Demolition, Time Stamped: CCN 166744, pgs. 2,3,5, and 6 (7/12/2012)

D. HAZARDOUS SUBSTANCES

Check all that apply:

☐ None ☒ Asbestos containing material ☒ Lead ☐ PCBs/PCB Articles ☒ Oils/Greases

☒ Chemicals List: Silver Lead based paint on exterior of the Filtered Water Storage Tank (CCN 116918 pg. 5)

☒ Radiological Contamination ☐ Mercury/Mercury Devices

☒ Other: Coal tar paint inside the Filtered Water Storage Tank (CCN 116918 pg. 4)

References/Comments:
- Asbestos containing material: Asbestos was present on tank exteriors and associated piping and possibly gasket material (IHC-2005-0005 pg. 2, SH-2005-S-014 pg. 1, and CCN 116918 pg. 5). At least some of this asbestos was friable (BHI-00221 pg. 3-113).
- Lead: Lead paint was present on tank exteriors (CCN 116918 pgs. 4 & 5).
- Oils/Greases: Soil beneath the facility tanks was stained with oil (CCN 116918 pg. 6). The stained soil was determined to be oil impregnated sand utilized to inhibit corrosion of the bottom surfaces of the tanks.
- Radiological Contamination: Facility piping was potentially radiologically contaminated when contaminated water was transferred to the facility tanks (CCN 095435 Table A-1 pg. 8). The tanks were labeled "Potentially Internally Contaminated" (IHC-2005-0005 pg. 2 & CCN 116918 pg. 5). There was a potential for low levels of radiological contamination to be present in the After Heat Removal Tank because it received secondary reactor cooling water (CCN 116918 pg. 5).

Liquids: ☒ Yes ☐ No

If yes, describe source and nature of liquids:
This facility contained four water storage tanks and associated piping (BHI-00221 pg. 3-113 & SIS Facility Summary Report for 1900-N). The piping transported water between the tanks and the 105-N Reactor and various reactor process systems (BHI-00221 pg. 3-113 & SIS Facility Summary Report for 1900-N). The water at the facility was potentially radiologically contaminated (CCN 095435 Table A-1 pg. 8, IHC-2005-0005 pg. 2, and CCN 116918 pg. 5).

Were the hazardous substances removed from the facility prior to demolition? ☐ Yes ☒ No

As verified by what documentation:
Asbestos was removed from the exteriors of the tanks and above-grade piping prior to demolition (IHC-2005-0005 pg. 2, SH-2005-S-014 pg. 1). A piece of asbestos, measuring approximately 324 sq. in., was discovered during demolition and was cleaned up as a spill (SH-2005-S-014 pg. 1).

Was there potential for hazardous substances to be introduced into the soils during facility operations or demolition? ☒ Yes ☐ No ☐ N/A

References/Comments:
Paint flakes were knocked off of facility tanks during demolition. The tank exteriors had been painted with lead paint and at least one of the tanks had an elevated lead concentration (CCN 116918 pgs. 4-5).

List any hazardous materials left in the building for demolition:
- Silver paint on exterior of the Filtered Water Storage Tank
- Coal tar paint inside the Filtered Water Storage Tank
- Lead paint present on tank exteriors
- Oil-stained soil beneath the facility tanks
- Potentially radiologically contaminated piping and tanks

Does review of historical records and process knowledge indicate a potential for radiological or chemical contamination to be present in the facility?
Historical knowledge of processes associated with this facility support the conclusion that the facility was not chemically or radiologically contaminated. However, demolition of the above grade tank structures and components in 2005

100-N ANCILLARY FACILITIES REMOVAL ACTION SAMPLING DETERMINATION FORM

Determination Number
SDF-100N-020 Rev.1

appeared to have contributed to leaving paint flakes containing high lead concentration in the facility footprint soils following demolition. The soils, and presumably the soil contaminated with paint chips, have since been removed with the remainder of the below grade of the facility.

Chemical:
Paint flakes created during demolition of the tanks would likely have been removed with the remainder of the below grade of the facility. The oil-impregnated sands present beneath the tanks was located within the facility foundations, which were removed during below grade demolition.

Radiological:
One radiological survey performed at the 1900-N facility did not detect contamination, while another radiological survey identified contamination on the exterior of the Demineralized Water Storage Tank (RSR-107N-05-0353 & RSR-100SMT-04-0291). The GPERS survey of the 1900-N facility footprint, following demolition of the above grade tanks did not detect radiological contamination (ESR-FRM-05-0188C & RSR-107N-05-0353). Accordingly, any radiological contamination present in the facility tanks or piping would have been removed during demolition.
The GPERS survey of the excavation following removal of the tank foundation rings and oil impregnated sands did not detect radiological contamination (ESRFRM120113C).

Comments:
Based on sample analysis, it was determined that removal of the oiled sands within the tank foundations was not necessary during above grade demolition of the tanks in 2005 (CCN 123355 pg. 1).

Based on sample analysis, water from piping associated with the 1900-N facility was approved for use as dust suppression (CCN 123355 pg. 1).

Pertinent design drawings include H-1-30541 Rev. 5, H-1-30542 Rev. 6, H-1-37147, H-1-37148, and H-1-45007 Sheets 9, 10, 16, and 17.

E. FIELD OBSERVATIONS

Visual Inspection

Were any stained soils/anomalies discovered during or after demolition of the facility? ☐ Yes ☒ No

References/Comments:
See visual inspection CCN 166744 (attached).

Were samples taken of the stained soils/anomalies? ☐ Yes ☐ No ☒ N/A

References/Comments:

Do results of the samples indicate that chemical contamination exists? ☐ Yes ☐ No ☒ N/A

References/Comments:

Is the area potentially a discovery site? ☐ Yes ☒ No

References/Comments:

Radiological Surveys

Did radiological surveys (GPERS or equivalent) identify contamination? ☒ Yes ☐ No

References/Comments:
One radiological survey record documented the presence of radiological contamination on the exterior of the Demineralized Water Storage Tank (RSR-100SMT-04-0291). No other reviewed radiological survey identified contamination. Radiological contamination was not detected during the GPERS survey of the facility footprint following removal of the above grade tanks (ESR-FRM-05-0188C). Additionally, the GPERS survey performed following removal of the tank foundation rings and oil impregnated sands did not identify contamination (ESRFRM120113C).

100-N ANCILLARY FACILITIES REMOVAL ACTION SAMPLING DETERMINATION FORM

Determination Number
SDF-100N-020 Rev.1

Were samples taken of the radiologically contaminated soils? ☐ Yes ☐ No ☒ N/A

References/Comments:
This question is not applicable because the identified radiological contamination was not present in facility soils, but on the Demineralized Water Storage Tank (RSR-100SMT-04-0291).

Is the area potentially a discovery site? ☐ Yes ☒ No

References/Comments:
The GPERS survey of the facility footprint, or of the excavation following removal of the oil impregnated sands did not detect radiological contamination (ESR-FRM-05-0188C and ESRFRM120113C).

Were the contaminated materials removed? ☒ Yes ☐ No ☐ N/A

References/Comments:
The Demineralized Water Storage Tank was removed during demolition and disposed at the ERDF (CCN 123355 pgs. 1 & 2). The tank foundation was subsequently demolished and removed in 2012.

F. WIDS SITES

Were there any WIDS sites affected by D4 activities? ☒ Yes ☐ No

If yes, list the WIDS sites:
124-N-2: This site was a septic tank. Movement of heavy equipment during 1900-N demolition caused a partial collapse of 124-N-2 (EL-1589 pg. 87 & SIS Facility Summary Report for 1900-N pgs. 1 & 2). The septic tank portion of the system was removed by D4 in 2005, the cesspool section of the system was removed by D4 in 2012 in conjunction with demolition of the 182-N Building.

100-N-61:4 and 100-N-84:1, 3, 4, 7: These sites consist of pipelines existing underneath and adjacent the 1900-N tanks. The portion of these pipelines that fell within the excavation layback boundary were removed during D4 activities at the 1900-N facility.

Were the WIDS site(s) completely removed? ☐ Yes ☒ No

References/Comments:
124-N-2: The collapsed portion of 124-N-2 was filled with rock and soil (EL-1589 pg. 87 & SIS Facility Summary Report for 1900-N pgs. 1 & 2). It was not removed during D4 activities at the 1900-N facility, however, the site was removed by D4 at a later date.

100-N-61:4 and 100-N-84:1, 3, 4, 7: The FR organization is responsible to close out this WIDS site.

Will the Ancillary Facility Footprint be deferred to FR to be closed out with a co-located Waste SIte? ☐ Yes ☒ No

References/Comments:
The FR organization is responsible to close out WIDS sites 100-N-61:4, 100-N-84:1, 3, 4, and 7. As such, any portion of 100-N-61:4 that has not been removed by the D4 organization will be removed and verification sampled (if required) by the FR organization. Deferral will not be necessary since the sites are already within the scope of an FR remedial action.

G. COPCs FOR SOILS AND STRUCTURES REMAINING AFTER DEMOLITION

What are the potential contaminants of concern for the remaining below-grade soil?

☒ None ☐ SVOC ☐ VOC ☐ Metals ☐ TPH ☐ Rad ☐ PCBs

☐ Other (Specify): _____

Comments:

Summary of in-process soil sampling requirements:
N/A

100-N ANCILLARY FACILITIES REMOVAL ACTION SAMPLING DETERMINATION FORM

Determination Number
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Constituents detected / concentrations / rationale
Consult Sample Collection Summary below

Sample Collection Summary
- Oiled sand at 1900-N: Sample (HEIS) Number J036N8 (CCN 123355 pg. 1)
- Water at 1900-N: Sample (HEIS) Numbers J030N8 and J03748 (CCN 123355 pg. 1)
- Paint at 1900-N: Sample (HEIS) Numbers J103C8, J103C9, and J03379
- Demolition Debris from 1900-N: Sample (HEIS) Number J030D2 (WP-1900N001 pg. 1)

H. NOTES / ADDITIONAL INFORMATION

☒ Check here if additional information / data / maps / sketches are attached to this form.

If checked, list the attachment(s):
Visual Inspection of 1900-N excavation soils on 7/12/2012: CCN 166744

I. SAMPLING

Are soil samples required to demonstrate that remaining structure or below-grade soils meet cleanup standards? ☐ Yes ☒ No

Based on the above information it was determined that sampling: ☐ will ☒ will not be required in order to demonstrate that cleanup criteria have been met.

The individual below acknowledges that the review of this facility has been completed. He or she also commits to provide to the Department of Energy (DOE) and the Washington State Department of Ecology (Ecology) any available information that could alter the sampling decision established in this form.

Information Reviewer Signature	Printed Name	Date
David Warren	David Warren	9/5/12

The regulatory representative below agrees with the decision outlined in section I of this form for the indicated facility and supports implementation of that decision based on the information currently available.

DOE Signature	Printed Name RF Guercia	Date 9/5/2012
Ecology Signature Nina M. Menard	Printed Name NINA M Menard	Date 9/11/2012

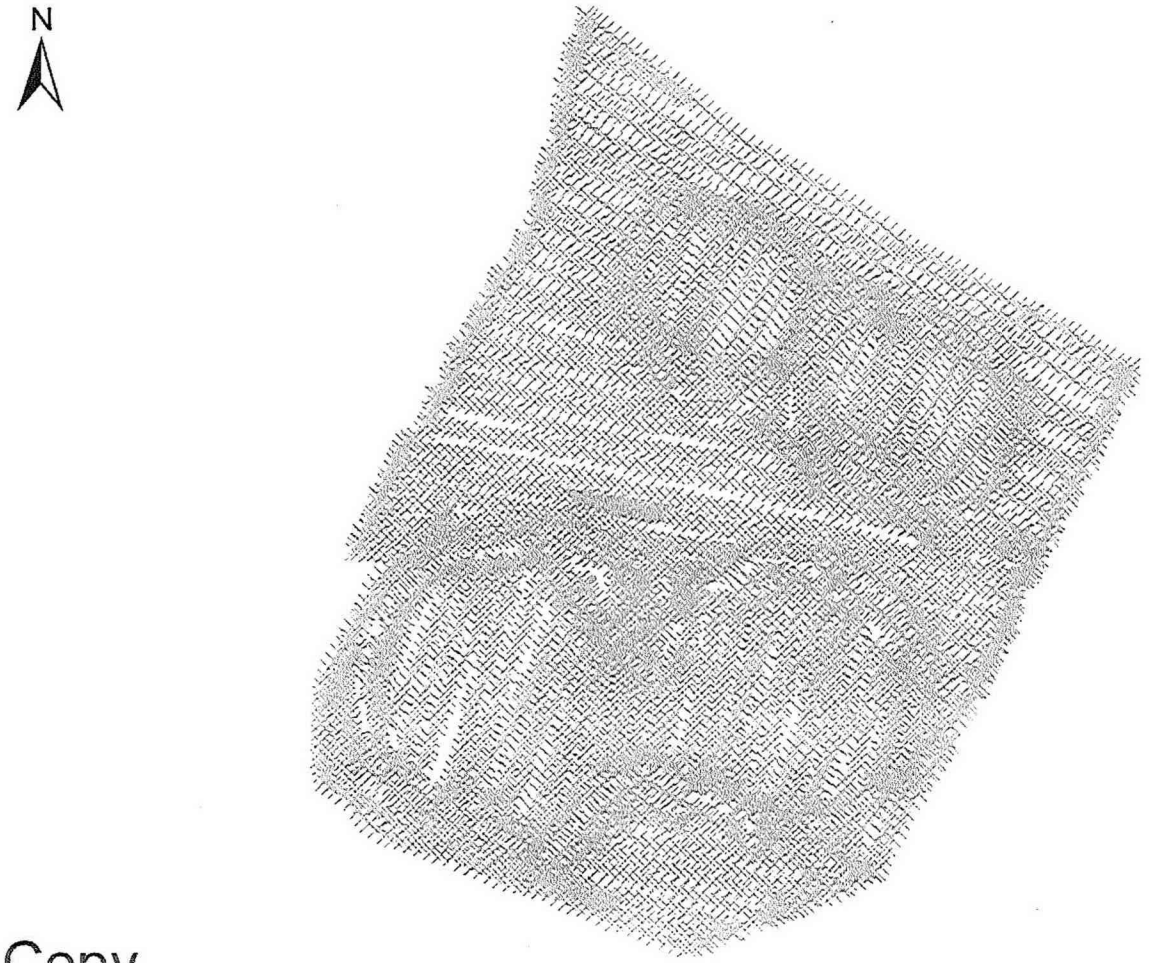
1900-N Tanks Pads Removal Visual Inspection Photographs

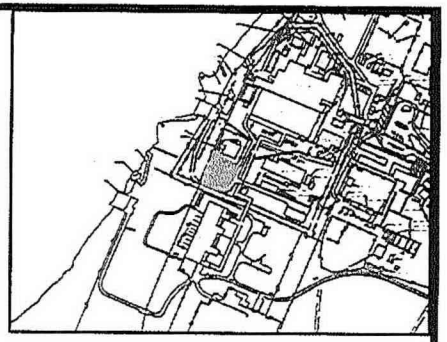
1900-N Excavation Looking West (view from Southeast tank ring excavation to Southwest excavation)

1900-N Excavation Looking West (view from Northeast tank ring excavation to Northwest excavation).

1900-N Excavation Looking East (view from Northwest tank ring excavation to Northeast excavation)

1900-N Excavation Looking South-Southwest (view from Southwest tank ring excavation)





Site View

Copy

Bkg Location
635 meters E →
1144 cpm

Legend

NET CPM

- × <1716
- 1716 - 5000
- 5000 - 10000
- 10000 - 25000
- 25000

Summary Statistics

Coverage File: N199
Number of Data Pnts: 4633
Type of Survey: gamma
Max GCPM: 1806
Avg Bkg CPM: 1144
Survey Date: 7/17/2012
Area Surveyed: 3,834 m^2
Project File: ESRFRM120113
Pdf File: ESRFRM120113C

100N D4
1900-N
GPERS Radiological Survey
Gamma Track Map

0 5 10 15 20 25
Meters

Environmental Excellence
HANFORD

EBERLINE SERVICES
HANFORD, INC.

Survey Map Prepared By Bruce Coomer, ESI

Attachment 10

168489

^WCH Document Control

From: Saueressig, Daniel G
Sent: Monday, November 05, 2012 7:47 AM
To: ^WCH Document Control
Subject: FW: 100-N BIOVENTING WELLS

Please provide a chron number. This email documents a regulatory agreement.

Thanks,

Dan Saueressig
FR Environmental Project Lead
Washington Closure Hanford
521-5326

From: Chance, Joanne C [mailto:joanne.chance@rl.doe.gov]
Sent: Monday, November 05, 2012 7:46 AM
To: Elliott, Wanda; Saueressig, Daniel G
Subject: RE: 100-N BIOVENTING WELLS

RL also concurs.

Joanne C. Chance
U.S. Department of Energy
Office of Assistant Manager for River and Plateau
825 Jadwin Ave / MSIN A3-04
Richland, WA 99352
(509) 376-0811

From: Elliott, Wanda (ECY) [mailto:well461@ecy.wa.gov]
Sent: Thursday, November 01, 2012 3:08 PM
To: Saueressig, Daniel G; Chance, Joanne C
Subject: RE: 100-N BIOVENTING WELLS

Ecology agrees that 199-N-173 does not need to be included in the bioventing well network.

Wanda Elliott
(509) 372-7904
Environmental Scientist
Nuclear Waste Program
Washington State Department of Ecology

From: Saueressig, Daniel G [mailto:dgsauere@wch-rcc.com]
Sent: Thursday, November 01, 2012 2:05 PM

To: Elliott, Wanda (ECY); Chance, Joanne C
Subject: 100-N BIOVENTING WELLS

Wanda/Joanne, per our previous discussions regarding the configuration of the insitu bioremediation well configuration, I believe there was consensus that well 199-N-173 (on the bench of the river) did not need to be hooked up to the air injection system due to the very small amount of vadose zone in the area, the fact that the soil samples taken during well installation didn't find any contamination above the remedial action goals and the fact that the well screen is underwater a majority of the year due to fluctuating groundwater levels.

Can you confirm that the project doesn't need to include well 199-N-173 in the bioventing well network at this time as depicted in the approved design? Once I receive your concurrence, I'll document the agreement at the next UMM.

Thanks,

Dan Saueressig
FR Environmental Project Lead
Washington Closure Hanford
521-5326

Attachment 11

168477

^WCH Document Control

From: Saueressig, Daniel G
Sent: Thursday, November 01, 2012 12:51 PM
To: ^WCH Document Control
Subject: FW: UPR-100-N-41 Test Pit Location Map
Attachments: UPR-100-N-42_11-1-12 Layout1 (1).pdf

Please provide a chron number (and include the attachment). This email document a regulatory agreement.

Thanks,

Dan Saueressig
FR Environmental Project Lead
Washington Closure Hanford
521-5326

From: Elliott, Wanda (ECY) [mailto:well461@ECY.WA.GOV]
Sent: Thursday, November 01, 2012 12:03 PM
To: Thompson, Wendy S
Cc: Jakubek, Joshua E; Howell, Theresa Q; Saueressig, Daniel G
Subject: RE: UPR-100-N-41 Test Pit Location Map

Yes. The location looks fine.

Wanda Elliott
(509) 372-7904
Environmental Scientist
Nuclear Waste Program
Washington State Department of Ecology

From: Thompson, Wendy S [mailto:WSTHOMPS@wch-rcc.com]
Sent: Thursday, November 01, 2012 11:43 AM
To: Elliott, Wanda (ECY)
Cc: Jakubek, Joshua E; Howell, Theresa Q; Saueressig, Daniel G
Subject: UPR-100-N-41 Test Pit Location Map

Hi Wanda,

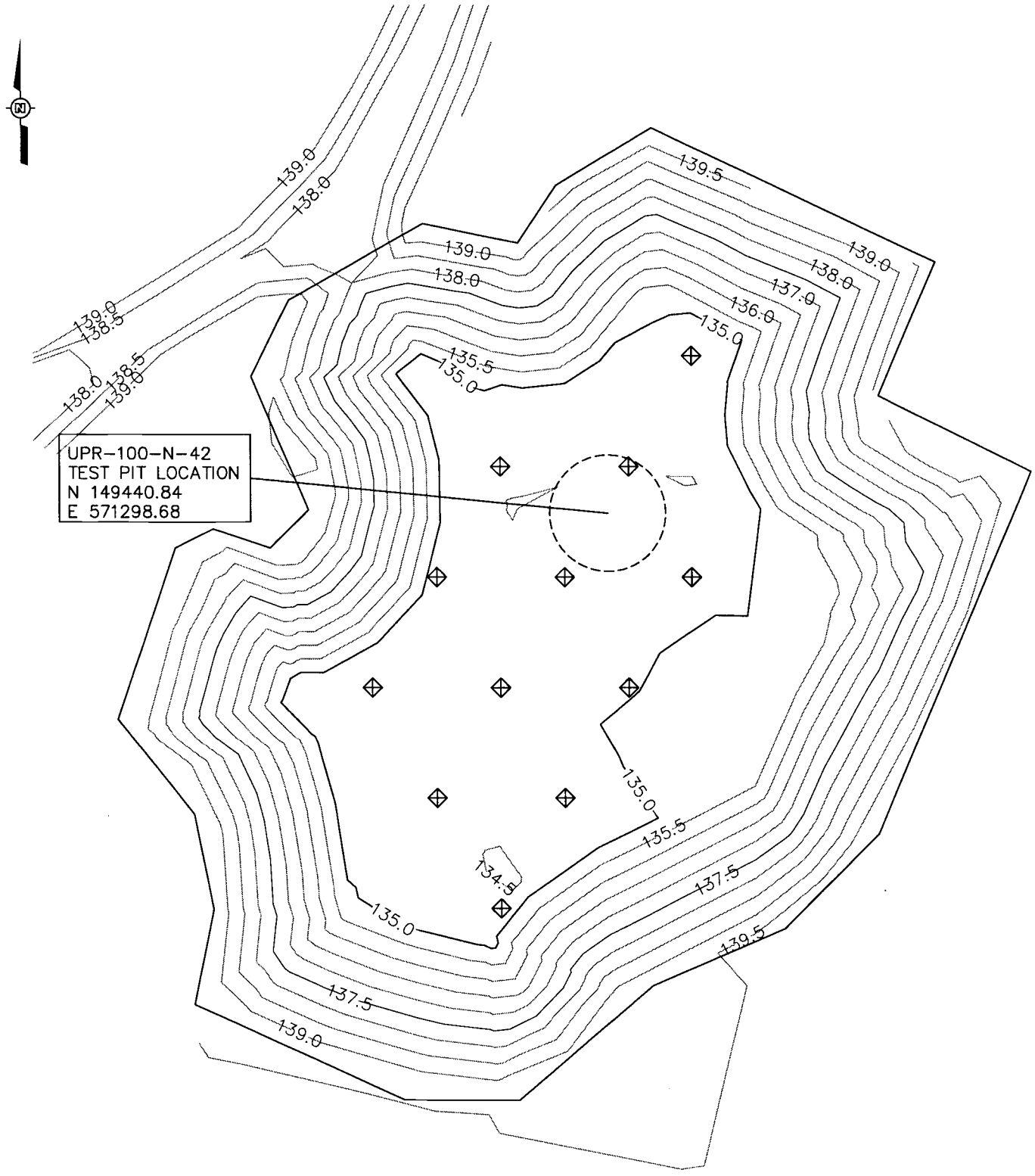
Would you look at this map and let us know if the proposed test pit location for UPR-100-N-42 is acceptable? The location was selected based on your input and to provide safe access for personnel and equipment by not getting too close to the current excavation's sidewalls.

Thank you,

Wendy

<< File: UPR-100-N-42_11-1-12 Layout1 (1).pdf >>

\\autocad01\cad_projects\rs_samplingfigures\100n\upr-100-n-42_11-1-12.dwg



SCALE 1:300

3 0 3 6 12 meters

Legend

DEEP SAMPLE LOCATIONS

UPR-100-N-42
Test Pit Site Plan

Attachment 12

168168

^WCH Document Control

From: Saueressig, Daniel G
Sent: Thursday, October 18, 2012 8:50 AM
To: ^WCH Document Control
Subject: FW: 100-n-63:2 proposed land bridge expansion -- RL concurs
Attachments: 100-N-63-2 North Land Bridge Evaluation-rev 1.docx

Please provide a chron number (and include the attachment). This email documents a regulatory agreement.

Thanks,

Dan Saueressig
FR Environmental Project Lead
Washington Closure Hanford
521-5326

From: Chance, Joanne C [mailto:joanne.chance@rl.gov]
Sent: Thursday, October 18, 2012 8:23 AM
To: Elliott, Wanda; Saueressig, Daniel G
Cc: Boyd, Alicia; Buckmaster, Mark A
Subject: RE: 100-n-63:2 proposed land bridge expansion -- RL concurs

Hi Wanda and Dan,

RL concurs with the plan for the expanded land bridge described below. UMM documentation will suffice. Thanks.

Joanne C. Chance
U.S. Department of Energy
Office of Assistant Manager for River and Plateau
825 Jadwin Ave / MSIN A3-04
Richland, WA 99352
(509) 376-0811

From: Elliott, Wanda (ECY) [mailto:well461@ecy.wa.gov]
Sent: Thursday, October 18, 2012 6:58 AM
To: Saueressig, Daniel G; Chance, Joanne C
Cc: Boyd, Alicia (ECY); Buckmaster, Mark A
Subject: RE: 100-n-63:2 proposed land bridge expansion

I concur.

Wanda Elliott
(509) 372-7904
Environmental Scientist
Nuclear Waste Program
Washington State Department of Ecology

From: Saueressig, Daniel G [mailto:dgsauere@wch-rcc.com]
Sent: Wednesday, October 17, 2012 3:01 PM
To: Elliott, Wanda (ECY); Chance, Joanne C
Cc: Boyd, Alicia (ECY); Buckmaster, Mark A
Subject: 100-n-63:2 proposed land bridge expansion

Wanda/Joanne, we have determined that we need to expand the land bridge you approved in the email below slightly to the east so that this land bridge can also be used for a haul route to chase the plumes at UPR's-100-N-18, -20 and -24. I've noted the revised text from the previous agreement in red. Let me know if you concur and I'll document the agreement at the next UMM.

Thanks and give me a call if you have any questions.

Dan Saueressig
FR Environmental Project Lead
Washington Closure Hanford
521-5326

From: Elliott, Wanda (ECY) [mailto:well461@ECY.WA.GOV]
Sent: Thursday, September 06, 2012 7:24 AM
To: Saueressig, Daniel G; Chance, Joanne C; Buckmaster, Mark A
Cc: Boyd, Alicia
Subject: 100-n-63:2 proposed land bridge

I reviewed the packet of information that you provided me proposing a land bridge across 100-N-63:2 waste site and do not foresee any issues with the proposal.
Thanks,

Wanda Elliott
(509) 372-7904
Environmental Scientist
Nuclear Waste Program
Washington State Department of Ecology

Evaluation of 100-N-63:2 Land Bridge to Support Bio-Insitu Treatment

Introduction

On September 6, 2012 Ecology approved backfill of portion of the 100-N-63:2 waste site to make a land bridge to support installation of the bioventing equipment for waste site UPR-100-N-17 (WCH 2012). It has since been determined that this land bridge is needed to support further remediation of the UPR-100-N-18, UPR-100-N-20 and UPR-100-N-24 shallow zone diesel release sites. Therefore WCH request an expansion of the previously approved land bridge area to allow two-way traffic between the waste sites on the south side of the bridge to the staging pile area on the north. Figures 1 and 2 show the general location of the land bridge. This area has been excavated to design to remove the 100-N-63:2 pipeline. Radiological surveys were performed and verification samples collected in accordance with the 100 *Verification Sampling of the 100-N Treatment Storage and Disposal Unit Pipelines; 100-N-63:2, Pipelines Between 109-N, 105-N, 107-N, 1310N, 1322N, 1926N and 36" Process Drain to Outfall* (WCH 2011). The radiological survey and verification sample locations are also shown in Figures 1 and 2. The land bridge location was selected based on the review of the radiological survey results and individual verification sample results. These results show that backfill of this location should be allowed as no further remediation in this area is needed to meet the applicable cleanup criteria for soil as presented in the *Remedial Design Report/Remedial Action Work Plan for the 100-N Area* (DOE-RL 2006b).

Data Evaluation

Because the soil samples were collected for different verification decision units they were only analyzed for those analysis required for each decision (Table 1) identified in the Work Instruction for 100-N-63:2 verification work instruction (WCH 2011). Analytical results for four verification samples, plus one field duplicate within the land bridge location, and two adjacent locations to the north were reviewed and the data shown in Tables 2 through 5.

The radiological survey and results of the verification samples on the north side of the land bridge show radiological contamination, which may require additional remediation. For that reason the land bridge will not extend into this area. The verifications samples collected from within the land bridge area (sample numbers J1P1N0, J1F1M3, J1F1M4, J1F1M5, J1F1M6, and J1F1M7).

Verification sample results for those samples within the land bridge were conservatively compared against the applicable cleanup criteria for soil as presented in the 100-N CERCLA RDR/RAWP (DOE-RL 2006). An evaluation of these results shows that residual contaminant concentrations in the soil do not preclude installation of the land bridge or any future uses (as bounded by the rural-residential scenario). The results also demonstrate that residual contaminant concentrations are protective of groundwater and the Columbia River.

Evaluation of the results provided in Table 6 indicate that all COPCs were either undetected or were quantified below remedial action goals (RAGs) and soil lookup values with the exception of benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluorathene and benzo(k)fluoranthene which were detected above the soil RAGs for protection of ground water and the Columbia River. However, based on RESRAD modeling discussed in Appendix C of the 100-N Area RDR/RAWP (DOE-RL 2006), residual concentrations of these polyaromatic hydrocarbons (PAHs) are not predicted to migrate more than 0 m (0 ft) in 1,000 years, based on benzo(a)anthracene, having the lowest partitioning coefficient,

360 mL/g. The vadose zone underlying the bottom of the current excavation in this area is approximately 16.6 m (54.5 ft) thick. Therefore, residual concentrations of PAHs are predicted to be protective of groundwater, and thus, the Columbia River.

Potassium-40, Radium-226, thorium-228, and thorium-232 were detected in samples collected at the 100-N-63:2 waste site but are not considered in the evaluation. These isotopes are excluded from consideration based on natural occurrence and were all detected below background levels (based on an assumption of secular equilibrium, the background activities for radium-228 and thorium-228 are equal to the statistical background activity of 1.32 pCi/g for thorium-232) (DOE-RL 2006).

These samples were collected as part of the statistical and focus samples for interim closure of 100-N-63:2 and will be evaluated in the 100-N-63:2 closure verification package independent of this evaluation.

Figure 1. 100-N-63:2 Land Bridge Overlaid on Beta Survey Map

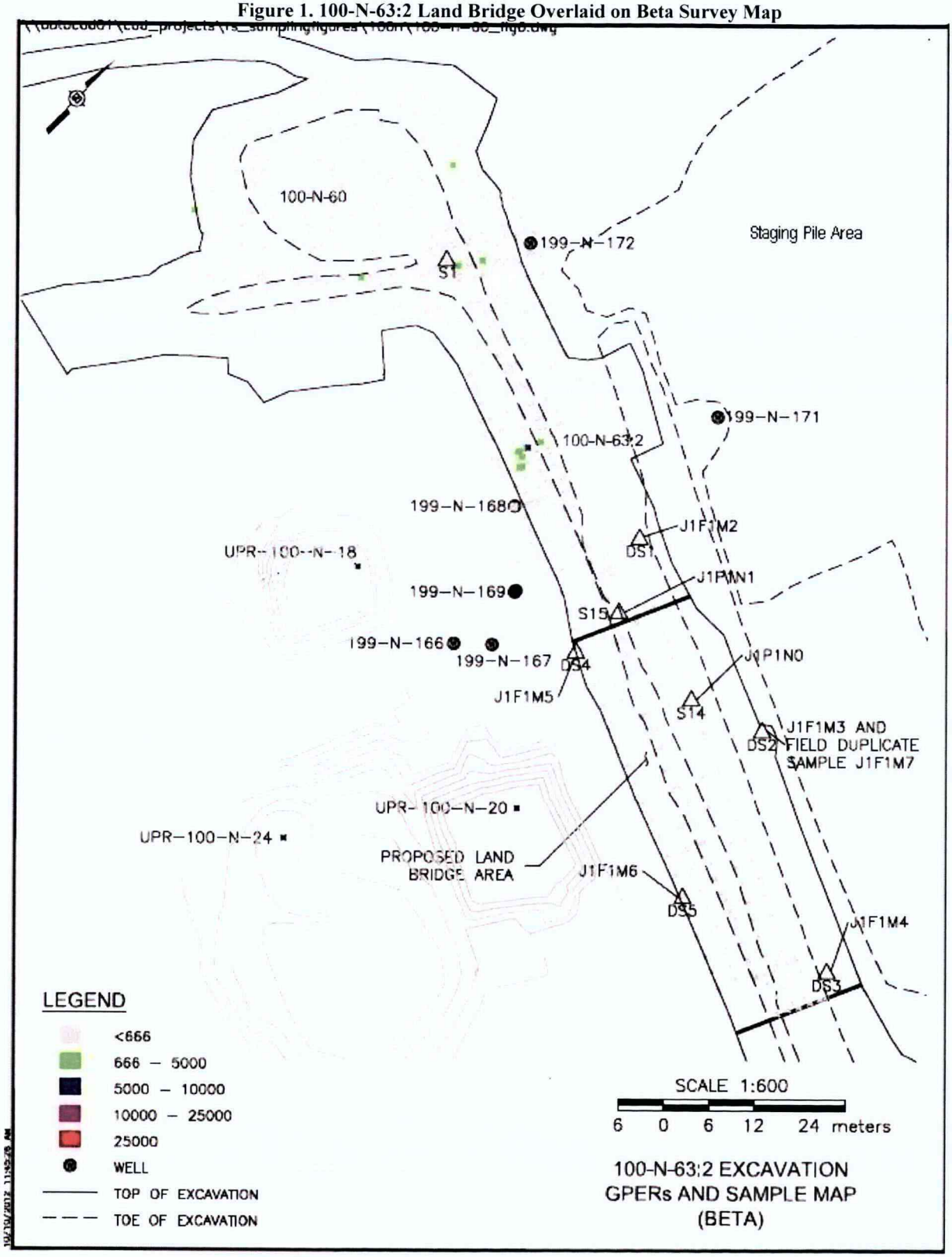


Figure 2. 100-N-63:2 Land Bridge Overlaid on Gamma Survey Map

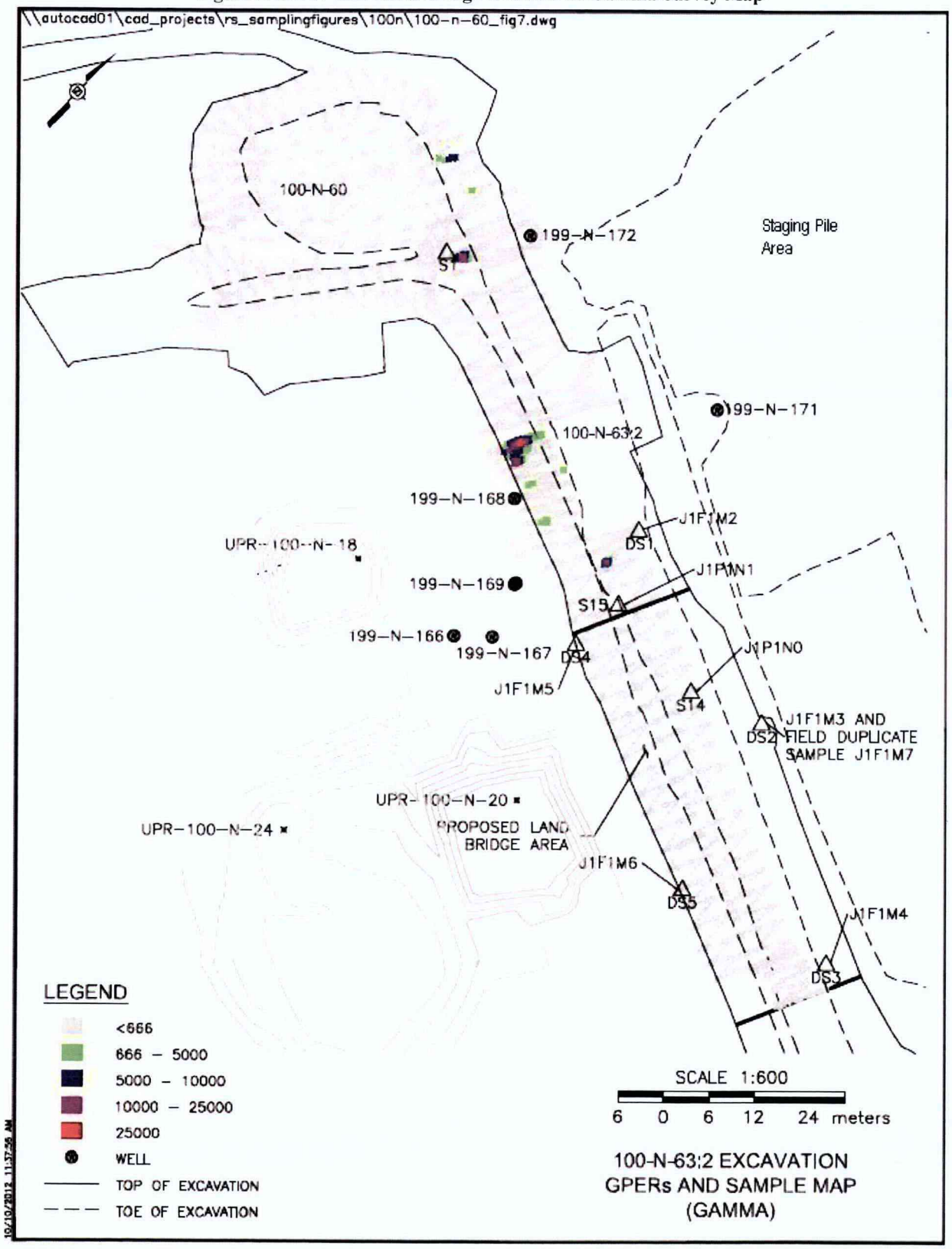


Table 1 Proposed Land Bridge Area 100-N-63:2 Sample Analysis Summary.

Sample Location Number	Description of Type of Pipeline Removed	Sample Number	Sample Analysis
S-14	Radioactively contaminated drain pipeline	J1P1N0	Cadmium, chromium (total) [a], mercury, hexavalent chromium, lead, nitrate/nitrite [b], sulfate, semi volatile organic analysis, total petroleum hydrocarbons, polyaromatic hydrocarbons, GEA, nickel-63, strontium-90, plutonium-239/240, thorium-282, thorium-232, uranium-233/234, uranium-238, tritium[d]
S-15		J1P1N1	
DS-1	Diesel fuel spill area soil	J1F1M2	Metals, petroleum hydrocarbons, polyaromatic hydrocarbons
DS-2		J1F1M3	
DS-4		J1F1M4	
DS-4		J1F1M5	
DS-5		J1F1M6	
DS-2 Duplicate [c]		J1F1M7	

[a] Analysis for the expanded list of Inductively Coupled Plasma (ICP) metals will include aluminum, antimony, arsenic, barium, beryllium, boron, cadmium, calcium, cobalt, copper, iron, lead, magnesium, manganese, molybdenum, nickel, potassium, selenium, silicon, silver, sodium, thallium, vanadium, and zinc in the analytical results package.

[b] To preclude holding time issues associated with Environmental Protection Agency (EPA) Method 300 for nitrites and nitrates, EPA Method 353 was performed.

[c] The duplicate sample location was identified at the discretion of the project analytical lead.

[d] The portion of the sample for tritium analyses was be collected at a depth of 0.15 m (6 in.) below the excavation surface per Tri-Party Agreement Change Notice TPA-CN-177 (dated August 21, 2007).

DS = diesel spill

GEA = gamma energy analysis

S = sample

Table 2. Inorganic Sample Summary Table (2 Pages).

Sample Number	Sample Date	Aluminum			Antimony			Arsenic			Barium			Beryllium		
		mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL
J1F1M2	5/23/12	6380	X	1.4	0.42	B	0.34	3.2		0.59	59.3	X	0.07	0.17	B	0.03
J1F1M3	5/23/12	9170	X	1.7	0.42	U	0.42	2.9		0.74	79.6	X	0.09	0.25		0.04
J1F1M4	5/23/12	7660	X	1.5	0.4	B	0.38	3.2		0.66	56.8	X	0.08	0.22		0.03
J1F1M5	5/23/12	6540	X	1.4	0.33	U	0.33	2.4		0.58	48	X	0.07	0.15	B	0.03
J1F1M6	5/23/12	6500	X	1.5	0.38	U	0.38	2.8		0.65	42.7	X	0.08	0.18	B	0.03
J1F1M7	5/23/12	8620	X	1.4	0.34	U	0.34	2.7		0.6	67.6	X	0.07	0.23		0.03
J1P1N0	5/14/12	6290	X	1.6	0.39	U	0.39	3.2		0.67	44.2	X	0.08	0.13	B	0.03
J1P1N1	5/14/12	7380	X	1.4	0.35	U	0.35	4.2		0.62	58.1	X	0.07	0.18	B	0.03

Sample Number	Sample Date	Boron			Cadmium			Calcium			Chromium			Cobalt		
		mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL
J1F1M2	5/23/12	1	B	0.87	0.096	B	0.04	10400	X	12.5	7.9	X	0.05	8.5	X	0.09
J1F1M3	5/23/12	1.5	B	1.1	0.19	B	0.05	7050	X	15.7	16.8	X	0.07	8.5	X	0.11
J1F1M4	5/23/12	0.97	U	0.97	0.15	B	0.04	7710	X	14	10.1	X	0.06	9.1	X	0.1
J1F1M5	5/23/12	0.86	U	0.86	0.13	B	0.04	9430	X	12.4	12.5	X	0.05	7.3	X	0.09
J1F1M6	5/23/12	0.97	U	0.97	0.11	B	0.04	6340	X	14	9	X	0.06	7.9	X	0.1
J1F1M7	5/23/12	1.2	B	0.89	0.18		0.04	6450	X	12.8	12.6	X	0.05	7.8	X	0.09
J1P1N0	5/14/12	1	U	1	0.066	B	0.04	7060	X	14.4	8.7	X	0.06	7.6		0.1
J1P1N1	5/14/12	0.91	U	0.91	0.094	B	0.04	9730	X	13.2	10.5	X	0.05	7.3		0.09

Sample Number	Sample Date	Copper			Iron			Lead			Magnesium			Manganese		
		mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL
J1F1M2	5/23/12	16	X	0.19	21300	X	3.4	4.6		0.24	4600	X	3.3	299	X	0.09
J1F1M3	5/23/12	17.9	X	0.24	22400	X	4.2	8.3		0.3	5190	X	4.1	360	X	0.11
J1F1M4	5/23/12	18.4	X	0.22	23000	X	3.8	6.4		0.27	5460	X	3.7	314	X	0.1
J1F1M5	5/23/12	15.9	X	0.19	19000	X	3.3	5		0.24	4960	X	3.2	289	X	0.09
J1F1M6	5/23/12	17.2	X	0.22	19500	X	3.8	4.8		0.27	4540	X	3.7	273	X	0.1
J1F1M7	5/23/12	16.5	X	0.2	20300	X	3.4	7.6		0.24	4900	X	3.4	314	X	0.09
J1P1N0	5/14/12	15.3		0.22	20900	X	3.9	3.1		0.28	4230	X	3.8	278	X	0.1
J1P1N1	5/14/12	16.2		0.2	20500	X	3.5	4.2		0.25	4930	X	3.5	293	X	0.09

Sample Number	Sample Date	Mercury			Molybdenum			Nickel			Potassium			Selenium		
		mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL
J1F1M2	5/23/12	0.011	B	0.007	0.31	B	0.23	9.3	X	0.11	1020		36.4	0.76	U	0.76
J1F1M3	5/23/12	0.0093	B	0.005	0.29	U	0.29	14.5	X	0.14	1750		45.7	0.96	U	0.96
J1F1M4	5/23/12	0.0095	B	0.007	0.26	U	0.26	11.4	X	0.12	1160		40.7	0.85	U	0.85
J1F1M5	5/23/12	0.0079	B	0.006	0.23	U	0.23	11.3	X	0.11	974		36	0.76	U	0.76
J1F1M6	5/23/12	0.0099	B	0.006	0.26	U	0.26	10.2	X	0.12	937		40.6	0.85	U	0.85
J1F1M7	5/23/12	0.0084	B	0.005	0.24	U	0.24	14.7	X	0.11	1580		37.2	0.78	U	0.78
J1P1N0	5/14/12	0.0064	U	0.006	0.26	B	0.26	9.6	X	0.13	1060		41.8	0.88	U	0.88
J1P1N1	5/14/12	0.0055	U	0.006	0.24	U	0.24	11.7	X	0.11	1160		38.2	0.8	U	0.8

Sample Number	Sample Date	Silicon			Silver			Sodium			Vanadium			Zinc		
		mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL
J1F1M2	5/23/12	284	XN	5	0.14	U	0.14	283		52.4	56.5	X	0.08	44.1	X	0.35
J1F1M3	5/23/12	564	X	6.3	0.18	U	0.18	260		65.7	54.9	X	0.1	58	X	0.44
J1F1M4	5/23/12	333	X	5.6	0.16	U	0.16	398		58.6	57.8	X	0.09	53	X	0.4
J1F1M5	5/23/12	345	X	5	0.14	U	0.14	309		51.8	51	X	0.08	49.7	X	0.35
J1F1M6	5/23/12	347	X	5.6	0.16	U	0.16	241		58.5	50.1	X	0.09	39.3	X	0.39
J1F1M7	5/23/12	460	X	5.1	0.15	U	0.15	267		53.5	50.6	X	0.09	58	X	0.36
J1P1N0	5/14/12	493	X	5.8	0.16	U	0.16	270		60.1	53.6		0.1	38.6	X	0.41
J1P1N1	5/14/12	630	X	5.3	0.15	U	0.15	326		55	50		0.09	39.3	X	0.37

Table 2. Inorganic Sample Summary Table (2 Pages).

Sample Number	Sample Date	Hexavalent Chromium			Bromide			Chloride			Fluoride			Nitrogen in Nitrate		
		mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL
J1F1M2	5/23/12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
J1F1M3	5/23/12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
J1F1M4	5/23/12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
J1F1M5	5/23/12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
J1F1M6	5/23/12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
J1F1M7	5/23/12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
J1P1N0	5/14/12	0.155	U	0.155	0.7	B	0.4	4.8	B	2	0.85	U	0.85	4.5		0.33
J1P1N1	5/14/12	0.155	U	0.155	0.39	U	0.39	3.1	B	2	0.83	U	0.83	1.9	B	0.32

Sample Number	Sample Date	Nitrogen in Nitrite			Nitrogen in Nitrite and Nitrate			Phosphorous in phosphate			Sulfate		
		mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL
J1F1M2	5/23/12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
J1F1M3	5/23/12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
J1F1M4	5/23/12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
J1F1M5	5/23/12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
J1F1M6	5/23/12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
J1F1M7	5/23/12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
J1P1N0	5/14/12	0.35	U	0.35	4.4		0.31	1.3	U	1.3	26.4		1.8
J1P1N1	5/14/12	0.34	U	0.34	1.5		0.31	1.2	U	1.2	11.3		1.7

B = Detected be low reporting limit
J = estimated result
MDA = minimum detectable activity
N = Recovery exceeds upper or lower control limits
NA = not analyzed
Q = qualifier
PQL = practical quantization limit
U = undetected
X = Serial dilution in the analytical batch indicates that physical and chemical interferences are precent

Table 3. Radionuclide Sample Summary Table .

Sample Number	Sample Date	Americium-241			Cesium-137			Cobalt-60			Europium-152			Europium-154		
		pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA
J1P1N0	5/14/12	0.056	U	0.232	0.028		0.023	0.006	U	0.027	0.0304	U	0.064	-0.0051	U	0.084
J1P1N1	5/14/12	0.037		0.033	0.208		0.029	1.41		0.029	-0.0029	U	0.06	-0.0356	U	0.08

Sample Number	Sample Date	Europium-155			Radium-226			Plutonium-238			Plutonium-239/240			Thorium-228		
		pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA
J1P1N0	5/14/12	0.049	U	0.078	0.424		0.041	0	U	0.057	0.00207	U	0.099	0.514		0.093
J1P1N1	5/14/12	0.015	U	0.052	0.417		0.05	0.032	U	0.059	0.0785		0.07	0.997		0.131

Sample Number	Sample Date	Thorium-230			Thorium-232			Uranium-234			Uranium-235			Uranium-238		
		pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA
J1P1N0	5/14/12	0.403		0.092	0.723		0.092	0.202		0.077	0.0147	U	0.062	0.235		0.062
J1P1N1	5/14/12	0.12	U	0.109	0.565		0.144	0.169		0.077	0.0123	U	0.055	0.186		0.062

Sample Number	Sample Date	Total beta radiostrontium			Nickel-63			Tritium		
		pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA
J1P1N0	5/14/12	0.211		0.152	3.55	U	13.5	0.014	U	0.026
J1P1N1	5/14/12	0.257		0.132	7.33	U	12.9	0.021	U	0.023

Table 4. Semivolatile Organic Compounds Sample Summary Table (2 Pages).

Sample Number	J1P1N0			J1P1N1		
Sample Date	5/14/12			5/14/12		
Constituent	ug/kg	Q	PQL	ug/kg	Q	PQL
1,2,4-Trichlorobenzene	29	U	29	28	U	28
1,2-Dichlorobenzene	23	U	23	22	U	22
1,3-Dichlorobenzene	13	U	13	12	U	12
1,4-Dichlorobenzene	14	U	14	14	U	14
2,4,5-Trichlorophenol	10	U	10	10	U	10
2,4,6-Trichlorophenol	10	U	10	10	U	10
2,4-Dichlorophenol	10	U	10	10	U	10
2,4-Dimethylphenol	69	U	69	67	U	67
2,4-Dinitrophenol	350	U	350	340	U	340
2,4-Dinitrotoluene	69	U	69	67	U	67
2,6-Dinitrotoluene	29	U	29	28	U	28
2-Chloronaphthalene	10	U	10	10	U	10
2-Chlorophenol	22	U	22	21	U	21
2-Methylnaphthalene	20	U	20	19	U	19
2-Methylphenol (cresol, o-)	14	U	14	13	U	13
2-Nitroaniline	52	U	52	51	U	51
2-Nitrophenol	10	U	10	10	U	10
3+4 Methylphenol (cresol, m+p)	34	U	34	34	U	34
3,3'-Dichlorobenzidine	94	U	94	91	U	91
3-Nitroaniline	76	U	76	74	U	74
4,6-Dinitro-2-methylphenol	340	U	340	340	U	340
4-Bromophenylphenyl ether	20	U	20	19	U	19
4-Chloro-3-methylphenol	69	U	69	67	U	67
4-Chloroaniline	85	U	85	83	U	83
4-Chlorophenylphenyl ether	22	U	22	21	U	21
4-Nitroaniline	76	U	76	74	U	74
4-Nitrophenol	100	U	100	99	U	99

Table 4. Semivolatile Organic Compounds Sample Summary Table (2 Pages).

Sample Number	J1P1N0			J1P1N1		
Sample Date	5/14/2012			5/14/2012		
Constituent	ug/kg	Q	PQL	ug/kg	Q	PQL
Acenaphthene	11	U	11	10	U	10
Acenaphthylene	18	U	18	17	U	17
Anthracene	18	U	18	17	U	17
Benzo(a)anthracene	21	U	21	31	J	20
Benzo(a)pyrene	21	U	21	20	U	20
Benzo(b)fluoranthene	27	U	27	39	JK	27
Benzo(ghi)perylene	17	U	17	16	U	16
Benzo(k)fluoranthene	42	U	42	41	UK	41
Bis(2-chloro-1-methylethyl)ether	24	U	24	23	U	23
Bis(2-Chloroethoxy)methane	24	U	24	23	U	23
Bis(2-chloroethyl) ether	17	U	17	17	U	17
Bis(2-ethylhexyl) phthalate	48	U	48	47	U	47
Butylbenzylphthalate	45	U	45	44	U	44
Carbazole	38	U	38	37	U	37
Chrysene	28	U	28	34	J	27
Di-n-butylphthalate	30	U	30	29	U	29
Di-n-octylphthalate	15	U	15	15	U	15
Dibenz[a,h]anthracene	20	U	20	19	U	19
Dibenzofuran	21	U	21	20	U	20
Diethyl phthalate	27	U	27	26	U	26
Dimethyl phthalate	24	U	24	23	U	23
Fluoranthene	38	U	38	63	J	37
Fluorene	19	U	19	18	U	18
Hexachlorobenzene	30	U	30	29	U	29
Hexachlorobutadiene	10	U	10	10	U	10
Hexachlorocyclopentadiene	52	U	52	51	U	51
Hexachloroethane	22	U	22	22	U	22
Indeno(1,2,3-cd)pyrene	23	U	23	22	U	22
Isophorone	18	U	18	17	U	17
N-Nitroso-di-n-dipropylamine	32	U	32	31	U	31
N-Nitrosodiphenylamine	22	U	22	21	U	21
Naphthalene	32	U	32	31	U	31
Nitrobenzene	23	U	23	22	U	22
Pentachlorophenol	340	U	340	340	U	340
Phenanthrene	18	U	18	44	J	17
Phenol	19	U	19	18	U	18
Pyrene	13	U	13	63	J	12

Table 5. Polyaromatic Hydrocarbons and Total Petroleum Hydrocarbons Sample Summary Table.

Sample Number	J1P1N0			J1P1N1			J1F1M2			J1F1M3		
Sample Date	5/14/2012			5/14/2012			5/23/2012			5/23/2012		
Constituent	ug/kg	Q	PQL	ug/kg	Q	PQL	ug/kg	Q	PQL	ug/kg	Q	PQL
Polyaromatic hydrocarbons (PAH)												
Acenaphthene	9.9	U	9.9	9.5	U	9.5	10	U	10	25	JX	11
Acenaphthylene	8.9	U	8.9	8.6	U	8.6	9.2	U	9.2	9.8	U	9.8
Anthracene	3	U	3	42		2.9	3.1	U	3.1	3.3	U	3.3
Benzo(a)anthracene	3.2	U	3.2	78		3	5.4	J	3.3	52		3.5
Benzo(a)pyrene	6.4	U	6.4	42		6.1	6.6	U	6.6	33		7
Benzo(b)fluoranthene	4.2	U	4.2	48		4	4.3	U	4.3	53	X	4.6
Benzo(ghi)perylene	7.2	U	7.2	27	J	6.9	7.4	U	7.4	26	J	7.8
Benzo(k)fluoranthene	3.9	U	3.9	18		3.8	4	U	4	21		4.3
Chrysene	4.8	U	4.8	53		4.6	5	U	5	51		5.3
Dibenz[a,h]anthracene	11	U	11	10	U	10	11	U	11	12	U	12
Fluoranthene	13	U	13	140		12	13	U	13	130		14
Fluorene	5.2	U	5.2	14	J	5	5.4	U	5.4	19	J	5.7
Indeno(1,2,3-cd)pyrene	12	U	12	24	J	11	12	U	12	23	J	13
Naphthalene	12	U	12	11	U	11	12	U	12	19	JX	13
Phenanthrene	12	U	12	85		11	12	U	12	93		13
Pyrene	12	U	12	150		11	12	U	12	130		13
Total Petroleum Hydrocarbons (TPH)												
TPH - Diesel	5700		670	5100		670	2300	JB	650	12000	B	710
TPH - Diesel Extended carbon range	7400		980	7900		980	4600		960	23000		1000

Sample Number	J1F1M4			J1F1M5			J1F1M6			J1F1M7		
Sample Date	5/23/12			5/23/2012			5/23/2012			5/23/2012		
Constituent	ug/kg	Q	PQL	ug/kg	Q	PQL	ug/kg	Q	PQL	ug/kg	Q	PQL
Polyaromatic hydrocarbons (PAH)												
Acenaphthene	10	U	10	10	U	10	10	U	10	10	U	10
Acenaphthylene	9.1	U	9.1	9.2	U	9.2	9.1	U	9.1	9.2	U	9.2
Anthracene	3.1	U	3.1	29	X	3.1	3.1	U	3.1	3.1	U	3.1
Benzo(a)anthracene	6.5	J	3.2	73		3.2	3.8	JX	3.2	19		3.2
Benzo(a)pyrene	6.5	U	6.5	40		6.5	6.5	U	6.5	15		6.5
Benzo(b)fluoranthene	11	JX	4.3	50	X	4.3	4.5	JX	4.2	19		4.3
Benzo(ghi)perylene	7.3	U	7.3	26	J	7.3	7.2	U	7.2	9.3	J	7.3
Benzo(k)fluoranthene	4.6	J	4	22		4	4	U	4	7.2	J	4
Chrysene	7.1	JX	4.9	60		4.9	4.9	U	4.9	17	J	4.9
Dibenz[a,h]anthracene	11	U	11	11	U	11	11	U	11	11	U	11
Fluoranthene	17	J	13	150		13	13	U	13	27	J	13
Fluorene	5.4	U	5.4	18	J	5.4	5.3	U	5.3	5.4	U	5.4
Indeno(1,2,3-cd)pyrene	12	U	12	23	J	12	12	U	12	12	U	12
Naphthalene	12	U	12	12	U	12	12	U	12	12	U	12
Phenanthrene	12	U	12	87		12	12	U	12	12	U	12
Pyrene	16	J	12	140		12	12	U	12	30	J	12
Total Petroleum Hydrocarbons (TPH)												
TPH - Diesel	12000	B	680	3500	JB	680	2000	JB	680	11000	B	680
TPH - Diesel Extended carbon range	21000		1000	6100		1000	2400	J	990	31000		1000

Table 6. Comparison of the Land Bridge Area 100-N-63:2 Soil Sample Concentrations to Soil Action Levels.

COPC	Maximum Detected Result (pCi/g)	Soil Lookup Values (pCi/g)[a]			Does the Result Exceed Lookup Values?
		Shallow Zone Lookup Value	Soil Lookup Value for Groundwater Protection	Soil Lookup Value for River Protection	
Cesium-137	0.208	6.2	1,465	2,930[d]	No
Radium-226	0.424 (<BG)	1.05	NA	NA	No
Thorium-230	0.403	2.96	NA	NA	No
Thorium-232	0.723 (<BG)	1.3[i]	NA	NA	No
Strontium-90	0.211	4.5	27.6	55.2	No
Uranium-234	0.202	1.1[b]	1.1[b]	1.1[b]	No
Uranium-238	0.235 (<BG)	1.1[b]	1.1[b]	1.1[b]	No
COPC	**Result (mg/kg)**	**Soil Cleanup Levels (mg/kg)[a]**			**Does the Result Exceed RAGs?**
		Direct Exposure	**Protective of Groundwater**	**Protective of the River**	
Metals					
Arsenic	3.2 (<BG)	20[b]	20[b]	20[b]	No
Barium	79.6 (<BG)	5,600	200	400	No
Beryllium	0.25 (<BG)	10.4[d]	1.51[b]	1.51[b]	No
Boron[e]	1.5	7,200	320	--[f]	No
Cadmium[c]	0.19 (<BG)	13.9[d]	0.81[b]	0.81[b]	No
Chromium, total	16.8 (<BG)	80,000	18.5[b]	18.5[b]	No
Cobalt	9.1 (<BG)	24	15.7[b]	--[f]	No
Copper	18.4 (<BG)	2,960	59.2	22.0[b]	No
Lead	8.3 (<BG)	353	10.2[b]	10.2[b]	No
Manganese	360 (<BG)	3,760	512[b]	512[b]	No
Mercury	0.0099 (<BG)	24	0.33[c]	0.33[c]	No
Molybdenum[e]	0.26	400	8	--[f]	No
Nickel	14.7 (<BG)	1,600	19.1[b]	27.4	No
Vanadium	57.9 (<BG)	560	85.1[b]	--[f]	No
Zinc	58 (<BG)	24,000	480	67.8[b]	No
Inorganics					
Chloride	4.8 (<BG)	--	25,000	--	No
Nitrate (as Nitrogen)	4.5 (<BG)	128,000	1,000	2,000	No
Sulfate	26.4 (<BG)	--	25,000	--	No
Polyaromatic Hydrocarbons					
Acenaptthene	0.025	4,800	96	129	No
Anthracene	0.029	4,800	96	129	No
Benzo(a)anthracene	0.073	1.37	0.015[g]	0.015[g]	Yes[g]
Benzo(a)pyrene	0.040	0.137	0.015[g]	0.015[g]	Yes[g]
Benzo(b)fluoranthene	0.053	1.37	0.015[g]	0.015[g]	Yes[g]
Benzo(g,h,i)perylene[f]	0.026	2,400	48	192	No
Benzo(k)fluoranthene	0.022	1.37	0.015[g]	0.015[g]	Yes[g]
Chrysene	0.060	13.7	0.12	0.1[g]	No
Fluoranthene	0.150	3,200	64	18.0	No
Fluorene	0.019	3,200	64	260	No
Indeno(1,2,3-cd) pyrene	0.023	1.37	0.33[g]	0.33[g]	No
Naphthalene	0.019	1,600	16.0	988	No
Phenanthrene[f]	0.093	24,000	240	1,920	No
Pyrene	0.140	2,400	48	192	No
Total Petroleum Hydrocarbons					
TPH	31	200	200	200	No

Table 6. Comparison of the Land Bridge Area 100-N-63:2 Soil Sample Concentrations to Soil Action Levels.

[a] Lookup values and RAGs obtained from the 100 Area RDR/RAWP (DOE-RL 2006) unless otherwise noted.
[b] Where cleanup levels are less than background, cleanup levels default to background per WAC 173-340-700[4][d] (1996). The arsenic cleanup level of 20 mg/kg has been agreed to by the Tri-Party Agreement Project managers (DOE-RL 2006).
[c] Hanford Site-specific background value is not available; it was not evaluated during background study. Value used is from *Natural Background Soil Metals Concentrations in Washington State* (Ecology 1994).
[d] Carcinogenic cleanup level calculated based on the inhalation exposure pathway (WAC 173-340-750[3], 1996) using an airborne particulate mass-loading rate of 0.0001 g/m^3 (*Hanford Guidance for Radiological Cleanup* [WDOH 1997]).
[e] No Hanford Site-specific or Washington State background value is available.
[f] No parameters (bioconcentration factors or ambient water quality criteria values) are available from the Washington State Department of Ecology Cleanup Levels and Risk Calculations database or other databases to calculate cleanup levels (WAC 173-340-730(3)(a)(iii), 1996 [Method B for surface waters]).
[g] Because the soil partitioning coefficient values for copper and zinc are greater than 20 mL/g (22 mL/g and 30 mL/g, respectively), RESRAD modeling discussed in Appendix C of the 100-N Area RDR/RAWP (DOE-RL 2006) predicts that these constituents will not reach groundwater within 1,000 years. The vadose zone underlying the bottom of the 100-N-63:2 excavation is approximately 16.6 m (54.5 ft). Based on RESRAD modeling, constituents with a soil partitioning coefficient of 16 mL/g or greater are not predicted to migrate through a vadose zone of this thickness and reach groundwater within 1,000 years. Therefore, residual concentrations of the PAHs are predicted to be protective of groundwater and the Columbia River.

-- = not applicable
COPC = contaminant of potential concern
EPA = U.S. Environmental Protection Agency
BG = Hanford Specific Background activity or concentration
RAG = remedial action goal
RDL = required detection limit
RDR/RAWP = *Remedial Design Report/Remedial Action Work Plan for the 100 Area*
RESRAD = RESidual RADioactivity (dose assessment model)
WAC = *Washington Administrative Code*

References

DOE-RL, 2006, *Remedial Design Report/Remedial Action Work Plan for the 100-N Area,* DOE/RL-2005-93, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

Ecology, 1994, *Natural Background Soil Metals Concentrations in Washington State*, Publication No. 94-115, Washington State Department of Ecology, Olympia, Washington.

Ecology, 2011, Cleanup Levels and Risk Calculations (CLARC) Database, Washington State Department of Ecology, Olympia, Washington, <https://fortress.wa.gov/ecy/clarc/CLARCHome.aspx>.

WAC 173-340, 1996, "Model Toxics Control Act -- Cleanup," *Washington Administrative Code*.

WDOH, 1997, *Hanford Guidance for Radiological Cleanup*, WDOH/320-015, Rev. 1, Washington State Department of Health, Olympia, Washington.

WCH, 2011, *Verification Sampling of the 100-N Treatment Storage and Disposal Unit Pipelines; 100-N-63:2, Pipelines Between 109-N, 105-N, 107-N, 1310N, 1322N, 1926N and 36" Process Drain to Outfall,* 0100N-WI-G0022, Washington Closure Hanford, Richland, Washington.

WCH, 2012, *100-N-63-2 North Land Bridge Evaluation-rev 0. CCN 167390,* Washington Closure Hanford, Richland, Washington.

Attachment 13

168167

^WCH Document Control

From: Saueressig, Daniel G
Sent: Thursday, October 18, 2012 8:18 AM
To: ^WCH Document Control
Subject: FW: PARTIAL BACKFILL REQUEST FOR 128-N-1 -- Formal Backfill Concurrence Document Required
Attachments: 128-N-1 Partial Backfill Evaluation-10-17-12 final.docx; 128-N-1 additional remediation proposal_10-10-2012.doc

Please provide a chron number (and include the attachments). This email documents a regulatory agreement.

Thanks,

Dan Saueressig
FR Environmental Project Lead
Washington Closure Hanford
521-5326

From: Chance, Joanne C [mailto:joanne.chance@rl.gov]
Sent: Thursday, October 18, 2012 7:55 AM
To: Elliott, Wanda; Saueressig, Daniel G
Cc: Buckmaster, Mark A; Neath, John P; Howell, Theresa Q; Proctor, Megan L
Subject: RE: PARTIAL BACKFILL REQUEST FOR 128-N-1 -- Formal Backfill Concurrence Document Required

Hi Dan and Wanda,

RL supports the described partial backfill request. However, due to the extensive nature of the requested backfill (area and percent of excavated site) and Mooli Mooli recontouring, RL prefers that the standard procedure be followed to document Ecology's and RL's agreement via review and signature of a Backfill Concurrence Form with associated tables, etc. demonstrating that RAO's have been met. RL will support an expedited review of the document. Please contact me if you have questions. Thanks.

Joanne C. Chance
U.S. Department of Energy
Office of Assistant Manager for River and Plateau
825 Jadwin Ave / MSIN A3-04
Richland, WA 99352
(509) 376-0811

From: Elliott, Wanda (ECY) [mailto:well461@ecy.wa.gov]
Sent: Thursday, October 18, 2012 7:02 AM
To: Saueressig, Daniel G; Chance, Joanne C
Cc: Buckmaster, Mark A

Subject: RE: PARTIAL BACKFILL REQUEST FOR 128-N-1

I concur.

Wanda Elliott
(509) 372-7904
Environmental Scientist
Nuclear Waste Program
Washington State Department of Ecology

From: Saueressig, Daniel G [mailto:dgsauere@wch-rcc.com]
Sent: Wednesday, October 17, 2012 2:48 PM
To: Elliott, Wanda (ECY); Chance, Joanne C
Cc: Buckmaster, Mark A
Subject: RE: PARTIAL BACKFILL REQUEST FOR 128-N-1

Wanda/Joanne, I've revised the 128-N-1 partial backfill request to exclude the area where additional excavation will take place around EXC-13 and the proposal is now consistent with the plume chase request (also attached) that was approved last week. I thought it would be cleaner to get this agreement updated with the actual area of backfill discussed consistent with the plume chase agreement for this site.

Let me know if you concur and I'll get this agreement documented at the next UMM.

Thanks,

Dan Saueressig
FR Environmental Project Lead
Washington Closure Hanford
521-5326

<< File: 128-N-1 Partial Backfill Evaluation-10-17-12 final.docx >>

<< File: 128-N-1 additional remediation proposal_10-10-2012.doc >>

ıda (ECY) [mailto:well461@ECY.WA.GOV]
ctober 11, 2012 2:07 PM
ıaniel G; Chance, Joanne C
Mark A
ARTIAL BACKFILL REQUEST FOR 128-N-1

<< Message: 128-N-1 additional remediation proposal >> I concur with the partial backfill keeping in mind that there will be additional remediation of the elevated areas as outlined in the attached email.

Wanda Elliott
(509) 372-7904
Environmental Scientist
Nuclear Waste Program
Washington State Department of Ecology

From: Saueressig, Daniel G [mailto:dgsauere@wch-rcc.com]
Sent: Tuesday, October 02, 2012 6:40 AM
To: Elliott, Wanda (ECY); Chance, Joanne C
Cc: Buckmaster, Mark A

Subject: PARTIAL BACKFILL REQUEST FOR 128-N-1

Wanda/Joanne, I'd like to request your approval to conduct a partial backfill of the 128-N-1 waste site as discussed in our previous interface meeting. Attached is a draft agreement for your review/approval.

Let me know if you have any questions, we'll see you at tomorrow's interface meeting.

Thanks,

Dan Saueressig
FR Environmental Project Lead
Washington Closure Hanford
521-5326

<< File: 128-N-1 Partial Backfill Request.docx >>

Introduction

The purpose of this document is to obtain a regulatory concurrence for backfilling a portion of the 100-N-6, 100-N-16, 100-N-98 and 128-N-1 waste site excavation to support field activities including recontouring of the backfill to match the adjacent Mooli Mooli and revegetation during the 2012 revegetation window, This partial backfill will also support subsequent interim closure of the waste sites. This partial backfill will aid the project further in investigating the feasibility of recontouring areas of the Mooli Mooli adjacent to this excavation, as required by the *Cultural Resources Review for Remediation of Seven Waste Sites Near Mooli Mooli in Zone A in the 100-N Area* (WCH 2007). The excavation areas requiring partial backfill are delineated in Figure 1.

Remediation of the 100-N-6, 100-N-16, 100-N-98 and 128-N-1 waste sites began on August 2, 2010 and was completed on November 28, 2011. Between April 16 and 19, 2012, the excavation was expanded to the west to include stained soil area of the 100-N-98 waste site. Remediation of the 100-N-6, 100-N-16, and 128-N-1 waste sites was completed per the excavation design. The 100-N-98 waste site did not have a formal remediation design. The site was a surface contamination area remediated to approximately 1 meter (3.3 ft). Verification sampling of the excavation area was conducted at the 100-N-6, 100-N-16, 100-N-98 and 128-N-1 waste sites on July 25, 2012, per the *Work Instruction For Verification Sampling of the 100-N-6, 128-N-1; 128N-F8-3, 100-N-16, 128M-FS-2; Burn Pit 1, 100-N-98, 100-N Stain Area #3, 128-N-1, 128-N-1 Burning Pit; 100-N Burning Pit Waste Sites* (128-N-1 VWI) (WCH 2012).

Upon direct comparison of the verification sampling data results collected from the excavation area, to the soil clean up levels established in the *Remedial Design Report/Remedial Action Work Plan for the 100-N Area* (DOE-RL 2006), it was determined that all samples individually (with the exception of EXC-9, EXC-13, and FS-4), meet the remedial action objectives. Samples EXC-9, EXC-13, and FS-4 are located on the edge or the sidewall of the excavation and will require additional remediation. Partial backfill will not interfere with additional remediation that will be performed within the general area of EXC-9, EXC-13, and FS-4 sampling locations needed to meet the applicable cleanup criteria for soil as presented in the *Remedial Design Report/Remedial Action Work Plan for the 100-N Area* (DOE-RL 2006).

Data Evaluation

A summary of the verification samples collected and laboratory analyses performed is provided in Table 1. Verification sample results are provided in Tables 2-5. These results were compared against the applicable cleanup criteria for soil as presented in the 100-N CERCLA RDR/RAWP (DOE-RL 2006). Analytical results indicate that statistical samples EXC- 9 (J1PW14), EXC-13 (J1PW18), and focused sample FS-4 (J1PW37) are above the direct exposure limits for polycyclic aromatic hydrocarbons (PAHs). The EXC-9 sample results exceeded direct exposure soil cleanup criteria for benzo(a)anthracene, benzo(a)pyrene and benzo(b)fluoranthene. The EXC-13 sample results exceed the direct exposure soil cleanup criteria for benzo(a)pyrene using the SW-846 semivolatile method 8270, while the sample result by PAH method 8310 was well below the direct exposure RAG. To be conservative, the 8270 value was used in determining the need for additional remediation. The FS-4 sample results exceeded direct exposure soil cleanup criteria for benzo(a)pyrene and dibenzo(a,h) anthracene. Additional remediation will be performed around these three sample locations.

Verification sample results show that all COPCs in the other verification samples were either undetected or were quantified below remedial action goals (RAGs) and soil lookup values with the exception of benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluorathene and benzo(k)fluoranthene which were detected above the soil RAGs for protection of ground water and the Columbia River in some samples. These PAHs will not vertically migrate significantly in a 1,000 year period based on their high soil distribution coefficient values. The vadose zone underlying the bottom of the current excavation in this area is approximately 16.6 m (54.5 ft) thick. Therefore, residual concentrations of PAHs are predicted to be protective of groundwater and thus, the Columbia River.

These samples were collected as part of the statistical and focused samples for interim closure of the 100-N-6, 100-N-16, 100-N-98 and 128-N-1 waste sites. Final approval that the entire site (including areas of additional remediation and staging pile areas) has met remedial action objectives and goals, including statistical evaluation of the data set, will occur with the submittal, review, and approval of the *Remaining Sites Verification Package (RSVP) for the 100-N-6, 100-N-16, 100-N-98 and 128-N-1 Waste Sites.*

Backfill Boundary

The proposed backfill consists of two areas (one smaller 100-N-98 waste site and a large portion of the 128-N-1 waste site) identified as being bound by the eleven statistical and three focused sample locations whose results demonstrate that residual contaminant concentrations are protective of groundwater and the Columbia River. To be conservative half the distance between the failed verification sample locations and the nearest passing verification sample was used as the backfill boundary (Figure 1). The area between the two backfill areas requires further remediation and re-verification sampling needed (Figure 1). This is being scheduled for fiscal year 2013 along with additional cleanup of the staging pile area prior to verification sampling.

Figure 1. 128-N-1 Proposed Partial Backfill Areas

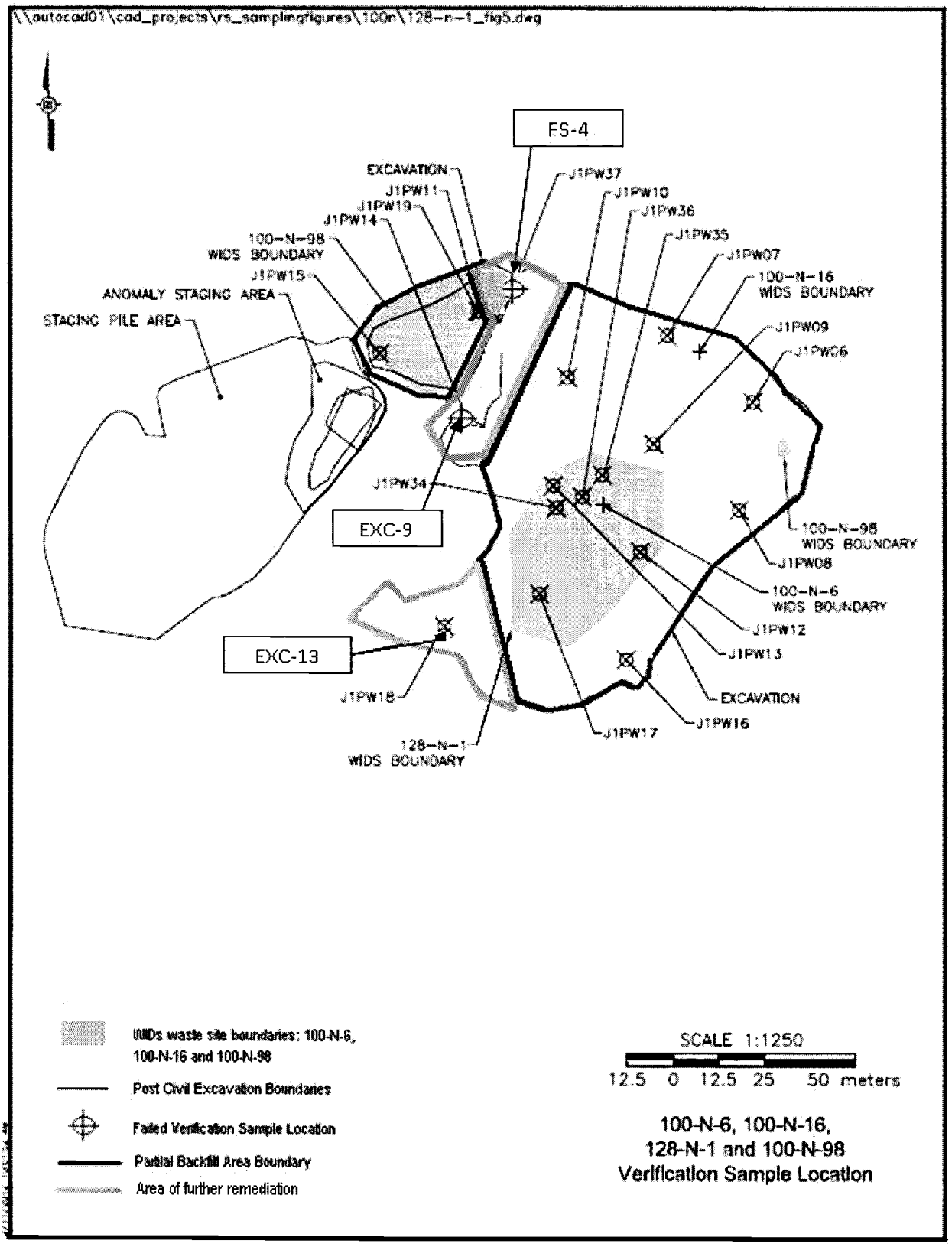


Table 1. 100-N-6, 100-N-16, 100-N-98 and 128-N-1 Waste Site Verification Sample Summary Table.

Sample Location	HEIS Sample Number	Northing	Easting	Sample Analysis [a]
EXC-1	J1PW06	149212.9	572166.2	ICP metals[a], mercury, PCBs, SVOAs, PAH [b], TPH, VOA
EXC-2	J1PW07	149230.9	572142.6	
EXC-3	J1PW08	149183.5	572162.4	
EXC-4	J1PW09	149201.5	572138.8	
EXC-5	J1PW10	149219.5	572115.3	
EXC-6	J1PW11	149237.4	572091.7	
EXC-7	J1PW12	149172.1	572135.1	
EXC-8	J1PW13	149190.1	572111.5	
EXC-9	J1PW14	149208.1	572088.0	
EXC-10	J1PW15	149226.0	572064.4	
EXC-11	J1PW16	149142.8	572131.3	
EXC-12	J1PW17	149160.7	572107.7	
EXC-13	J1PW18	149149.3	572080.4	
Duplicate of EXC-6[c]	J1PW19	TBD	TBD	
FS-1	J1PW34	149184.1	572112.3	ICP metals[a], mercury, PCBs, SVOAs, PAH [b], TPH, VOA
FS-2	J1PW35	149193.0	572124.7	
FS-3	J1PW36	149187.1	572119.2	
FS-4	J1PW37	149243.3	572100.2	

[a] The expanded list of ICP metals will include antimony, arsenic, barium, beryllium, boron, cadmium, chromium (total), cobalt, copper, lead, manganese, molybdenum, nickel, selenium, silver, vanadium, and zinc.

[b] Because method 8310 is specific to PAH analysis, data from this method will be used preferentially over the 8270 data for site evaluation of the PAH analytes.

[c] The duplicate sample location was selected at the discretion of the project analytical lead.

HEIS = Hanford Environmental Information System
ICP = inductively coupled plasma
NA = not applicable
PAH = polycyclic aromatic hydrocarbons
PCB = polychlorinated biphenyls
SVOA = semivolatile organic analysis
TBD = to be determined
TPH = total petroleum hydrocarbons – diesel range organics

Table 2. Metals Sample Results Summary Table (1 of 4 pages)

Sample Number	Sample Date	Aluminum			Antimony			Arsenic			Barium			Beryllium			Boron			Cadmium		
		mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL
J1PW06	7-25-2012	6950		1.4	0.35	U	0.35	3.5		0.61	41.6		0.07	0.5		0.03	1	B	0.91	0.097	B	0.04
J1PW07	7-25-2012	6840		1.5	0.36	U	0.36	3.4		0.62	37.7		0.07	0.44		0.03	0.92	U	0.92	0.084	B	0.04
J1PW08	7-25-2012	4440		1.4	0.34	U	0.34	1.9		0.59	56.9		0.07	0.15	U	0.15	0.87	U	0.87	0.036	B	0.04
J1PW09	7-25-2012	5500		1.4	0.34	U	0.34	2.8		0.59	42.4		0.07	0.59		0.03	0.88	U	0.88	0.068	B	0.04
J1PW10	7-25-2012	6870		1.5	0.37	U	0.37	4.2		0.63	46.6		0.07	0.43		0.03	0.94	U	0.94	0.14	B	0.04
J1PW11	7-25-2012	8700		1.4	0.35	U	0.35	3.4		0.61	72.6		0.07	0.45		0.03	1.6	B	0.9	0.11	B	0.04
J1PW12	7-25-2012	4490		1.4	0.35	U	0.35	2.1		0.61	29.8		0.07	0.32		0.03	0.91	U	0.91	0.047	B	0.04
J1PW13	7-25-2012	6200		1.3	0.33	U	0.33	3.1		0.57	49.1		0.07	0.55		0.03	0.85	U	0.85	0.094	B	0.04
J1PW14	7-25-2012	8020		1.4	0.34	U	0.34	3.3		0.59	218		0.07	0.5		0.03	4.4		0.88	0.14	B	0.04
J1PW15	7-25-2012	7600		1.6	0.38	U	0.38	4.2		0.67	59.3		0.08	0.47		0.03	2		0.99	0.21		0.04
J1PW16	7-25-2012	9260		1.4	0.33	U	0.33	3.6		0.58	77.8		0.07	0.45		0.03	1.6	B	0.86	0.12	B	0.04
J1PW17	7-25-2012	8750		1.5	0.38	U	0.38	4.9		0.66	54.7		0.08	0.45		0.03	1.2	B	0.98	0.11	B	0.04
J1PW18	7-25-2012	8010		1.5	0.36	U	0.36	3.7		0.63	61.3		0.07	0.44		0.03	1.3	B	0.94	0.12	B	0.04
J1PW19	7-25-2012	8190		1.3	0.33	U	0.33	3.4		0.57	69.6		0.07	0.43		0.03	1.6	B	0.85	0.12	B	0.04
J1PW34	7-25-2012	5580		1.5	0.38	U	0.38	2.7		0.66	34.1		0.08	0.43		0.03	0.98	U	0.98	0.089	B	0.04
J1PW35	7-25-2012	5500		1.4	0.34	U	0.34	4.1		0.58	41.5		0.07	0.55		0.03	1.4	B	0.87	0.17	B	0.04
J1PW36	7-25-2012	6310		1.4	0.35	U	0.35	2.8		0.6	44.3		0.07	0.44		0.03	0.93	B	0.9	0.069	B	0.04
J1PW37	7-25-2012	7760		1.3	0.32	U	0.32	3.3		0.56	49.4		0.06	0.49		0.03	1.5	B	0.83	0.1	B	0.04

Table 2. Metals Sample Results Summary Table (2 of 4 pages)

Sample Number	Sample Date	Calcium			Chromium			Cobalt			Copper			Iron			Lead			Magnesium		
		mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL
J1PW06	7-25-2012	8540	X	13.1	16.7	NXM	0.05	8.6	X	0.09	17.8		0.2	20900	X	3.5	3.7		0.25	6770	M	3.4
J1PW07	7-25-2012	8260	X	13.3	10.6	X	0.06	6.9	X	0.09	17.7		0.2	18200	X	3.6	3.5		0.25	4600		3.5
J1PW08	7-25-2012	6020	X	12.5	3.7	X	0.05	12.5	X	0.44	17.4		0.96	26100	X	3.4	3.3		1.2	4830		16.4
J1PW09	7-25-2012	6470	X	12.6	5.5	X	0.05	9.6	X	0.09	16		0.19	25700	X	3.4	3.3		0.24	4770		3.3
J1PW10	7-25-2012	9910	X	13.6	12.2	X	0.06	6.9	X	0.1	15.8		0.21	17700	X	3.7	3.6		0.26	5070		3.6
J1PW11	7-25-2012	3750	X	12.9	12	X	0.05	6.7	X	0.09	16		0.2	17500	X	3.5	5.3		0.25	4220		3.4
J1PW12	7-25-2012	2910	X	13.1	5.6	X	0.05	4.6	X	0.09	10.2		0.2	12200	X	3.5	2.4		0.25	2740		3.4
J1PW13	7-25-2012	9160	X	12.2	9.4	X	0.05	8.9	X	0.09	17.8		0.19	23300	X	3.3	4		0.23	4790		3.2
J1PW14	7-25-2012	6330	X	12.7	11.5	X	0.05	7.8	X	0.09	252		0.2	21500	X	3.4	112		0.24	4530		3.3
J1PW15	7-25-2012	5960	X	14.2	14.6	X	0.06	7.5	X	0.1	29.4		0.22	24100	X	3.8	140		0.27	4550		3.7
J1PW16	7-25-2012	4710	X	12.4	12.1	X	0.05	6.7	X	0.09	14.1		0.19	17500	X	3.3	5.5		0.24	4410		3.2
J1PW17	7-25-2012	18100	X	14.1	16.6	X	0.06	8.1	X	0.1	20.7		0.22	19500	X	3.8	5		0.27	6250		3.7
J1PW18	7-25-2012	12400	X	13.5	12.7	X	0.06	6.9	X	0.1	16.1		0.21	17800	X	3.6	4.2		0.26	5220		3.5
J1PW19	7-25-2012	3620	X	12.2	11.2	X	0.05	6.6	X	0.09	15		0.19	17400	X	3.3	4.8		0.23	4140		3.2
J1PW34	7-25-2012	7460		14	8.3		0.06	7	X	0.1	13.6		0.22	18500		3.8	3		0.27	4250		3.7
J1PW35	7-25-2012	11700		12.5	7.7		0.05	9.3	X	0.09	21.8		0.19	23000		3.4	8		0.24	5230		3.3
J1PW36	7-25-2012	8420		12.9	10.7		0.05	7.7	X	0.09	16.4		0.2	19400		3.5	3.7		0.25	4730		3.4
J1PW37	7-25-2012	3880		11.9	11.4		0.05	7.2	X	0.09	20.6		0.18	18800		3.2	6.8		0.23	4240		3.1

Table 2. Metals Sample Results Summary Table (3 of 4 pages)

Sample Number	Sample Date	Manganese			Mercury			Molybdenum			Nickel			Potassium			Selenium			Silicon		
		mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL
J1PW06	7-25-2012	301	X	0.09	0.0053	U	0.01	0.38	B	0.24	23.4	XM	0.11	1190		38	0.8	U	0.8	324	NX	5.2
J1PW07	7-25-2012	253	X	0.09	0.0047	U	0	0.26	B	0.24	11.3	X	0.12	1050		38.6	0.81	U	0.81	344	X	5.3
J1PW08	7-25-2012	349	X	0.09	0.0047	U	0	0.23	U	0.23	6.7	X	0.11	697		36.4	0.76	U	0.76	297	X	5
J1PW09	7-25-2012	309	X	0.09	0.0064	U	0.01	0.23	U	0.23	8.7	X	0.11	856		36.7	0.77	U	0.77	297	X	5.1
J1PW10	7-25-2012	283	X	0.1	0.0056	U	0.01	0.25	U	0.25	12.7	X	0.12	1130		39.4	0.83	U	0.83	298	X	5.4
J1PW11	7-25-2012	298	X	0.09	0.0047	U	0	0.24	U	0.24	12.3	X	0.11	1880		37.6	0.79	U	0.79	557	X	5.2
J1PW12	7-25-2012	166	X	0.09	0.0053	U	0.01	0.24	U	0.24	6.4	X	0.11	663		38	0.8	U	0.8	622	X	5.2
J1PW13	7-25-2012	304	X	0.09	0.0053	U	0.01	0.23	U	0.23	10.6	X	0.11	1040		35.5	0.75	U	0.75	338	X	4.9
J1PW14	7-25-2012	309	X	0.09	0.0076	B	0.01	0.23	U	0.23	16.7	X	0.11	1450		36.9	0.77	U	0.77	456	X	5.1
J1PW15	7-25-2012	304	X	0.1	0.0071	B	0.01	0.44	B	0.26	14.7	X	0.12	1260		41.4	0.87	U	0.87	405	X	5.7
J1PW16	7-25-2012	301	X	0.09	0.0047	U	0	0.23	U	0.23	12.1	X	0.11	1740		36	0.76	U	0.76	461	X	5
J1PW17	7-25-2012	323	X	0.1	0.0065	B	0.01	0.26	U	0.26	16.1	X	0.12	1380		40.9	0.86	U	0.86	508	X	5.6
J1PW18	7-25-2012	286	X	0.1	0.0047	U	0	0.25	U	0.25	12.4	X	0.12	1280		39.1	0.82	U	0.82	501	X	5.4
J1PW19	7-25-2012	299	X	0.09	0.0053	U	0.01	0.22	U	0.22	11.9	X	0.11	1750		35.4	0.74	U	0.74	577	X	4.9
J1PW34	7-25-2012	260		0.1	0.0056	U	0.01	0.26	U	0.26	9.7		0.12	792		40.8	0.86	U	0.86	228		5.6
J1PW35	7-25-2012	298		0.09	0.021		0.01	0.23	U	0.23	11		0.11	957		36.3	0.76	U	0.76	239		5
J1PW36	7-25-2012	278		0.09	0.0055	U	0.01	0.24	U	0.24	11.7		0.11	936		37.6	0.79	U	0.79	280		5.2
J1PW37	7-25-2012	280		0.09	0.0086	B	0.01	0.22	U	0.22	11.7		0.1	1550		34.7	0.73	U	0.73	304		4.8

Table 2. Metals Sample Results Summary Table (4 of 4 pages)

Sample Number	Sample Date	Silver			Sodium			Vanadium			Zinc		
		mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL
J1PW06	7-25-2012	0.21		0.15	420		54.7	50.4		0.09	41.8	X	0.37
J1PW07	7-25-2012	0.15	B	0.15	384		55.6	43.7		0.09	37.9	X	0.37
J1PW08	7-25-2012	0.21		0.14	332		52.4	84.2		0.42	47.3	X	0.35
J1PW09	7-25-2012	0.17	B	0.14	385		52.8	63.6		0.08	46.9	X	0.36
J1PW10	7-25-2012	0.18	B	0.15	403		56.7	43.8		0.09	39.1	X	0.38
J1PW11	7-25-2012	0.17	B	0.15	205		54.2	39.1		0.09	38.4	X	0.37
J1PW12	7-25-2012	0.16	B	0.15	154		54.7	28.7		0.09	24.6	X	0.37
J1PW13	7-25-2012	0.21		0.14	343		51.1	59.4		0.08	46.4	X	0.34
J1PW14	7-25-2012	0.28		0.14	294		53.1	50.8		0.09	57.4	X	0.36
J1PW15	7-25-2012	0.41		0.16	251		59.5	47.9		0.1	69.7	X	0.4
J1PW16	7-25-2012	0.18		0.14	250		51.8	37.8		0.08	43.4	X	0.35
J1PW17	7-25-2012	0.21		0.16	283		58.8	44		0.09	44.2	X	0.4
J1PW18	7-25-2012	0.16	B	0.15	247		56.3	41.2		0.09	38.5	X	0.38
J1PW19	7-25-2012	0.17		0.14	191		51	38.1		0.08	37.6	X	0.34
J1PW34	7-25-2012	0.16	U	0.16	225		58.8	46.9		0.09	37.3	X	0.4
J1PW35	7-25-2012	0.6		0.14	414		52.3	59		0.08	60.5	X	0.35
J1PW36	7-25-2012	0.2		0.15	318		54	46.7		0.09	39.4	X	0.36
J1PW37	7-25-2012	0.24		0.14	191		49.9	43.6		0.08	39.9	X	0.34

B = Detected be low reporting limit

J = estimated result

N = Recovery exceeds upper or lower control limits

NA = not analyzed

Q = qualifier

P = This flag is used for an aroclor target analyte where there is greater than 25% difference for detected concentrations between the two GC columns

PQL = practical quantization limit

U = undetected

X = Serial dilution in the analytical batch indicates that physical and chemical interferences are present

Table 3. Organic Compounds Statistical Sample Results Summary Table (1 of 8 Pages).

Sample Number	J1PW06			J1PW07			J1PW08			J1PW09			J1PW10			J1PW11			J1PW12		
Sample Date	7-25-2012			7-25-2012			7-25-2012			7-25-2012			7-25-2012			7-25-2012			7-25-2012		
Constituent	ug/kg	Q	PQL	ug/kg	Q	PQL	ug/kg	Q	PQL	ug/kg	Q	PQL	ug/kg	Q	PQL	ug/kg	Q	PQL	ug/kg	Q	PQL
Polycyclic aromatic Hydrocarbons																					
Acenaphthene	9.9	U	9.9	10	U	10	9.8	U	9.8	10	U	10	9.9	U	9.9	10	U	10	9.9	U	9.9
Acenaphthylene	8.9	U	8.9	9	U	9	8.8	U	8.8	9.1	U	9.1	8.9	U	8.9	9	U	9	8.9	U	8.9
Anthracene	3	U	3	3	U	3	3	U	3	3.1	U	3.1	3	U	3	15	J	3.1	3	U	3
Benzo(a)anthracene	3.1	U	3.1	3.2	U	3.2	3.1	U	3.1	3.2	U	3.2	3.2	U	3.2	48	X	3.2	3.1	U	3.1
Benzo(a)pyrene	6.3	U	6.3	6.4	U	6.4	6.3	U	6.3	6.5	U	6.5	6.4	U	6.4	93		6.4	6.3	U	6.3
Benzo(b)fluoranthene	4.1	U	4.1	4.2	U	4.2	4.1	U	4.1	4.2	U	4.2	4.2	U	4.2	94		4.2	4.1	U	4.1
Benzo(ghi)perylene	7.1	U	7.1	7.2	U	7.2	7.1	U	7.1	7.3	U	7.3	7.1	U	7.1	75		7.2	7.1	U	7.1
Benzo(k)fluoranthene	3.9	U	3.9	3.9	U	3.9	3.9	U	3.9	4	U	4	3.9	U	3.9	39		4	3.9	U	3.9
Chrysene	4.8	U	4.8	4.8	U	4.8	4.7	U	4.7	4.9	U	4.9	4.8	U	4.8	84		4.9	4.8	U	4.8
Dibenz[a,h]anthracene	11	U	11	11	U	11	11	U	11	11	U	11	11	U	11	19	JX	11	11	U	11
Fluoranthene	13	U	13	13	U	13	13	U	13	13	U	13	13	U	13	110		13	13	U	13
Fluorene	5.2	U	5.2	5.3	U	5.3	5.2	U	5.2	5.3	U	5.3	5.2	U	5.2	5.3	U	5.3	5.2	U	5.2
Indeno(1,2,3-cd)pyrene	12	U	12	12	U	12	12	U	12	12	U	12	12	U	12	70		12	12	U	12
Naphthalene	12	U	12	12	U	12	12	U	12	12	U	12	12	U	12	12	U	12	12	U	12
Phenanthrene	12	U	12	12	U	12	12	U	12	12	U	12	12	U	12	46		12	12	U	12
Pyrene	12	U	12	12	U	12	12	U	12	12	U	12	12	U	12	140		12	12	U	12
Polychlorinated Biphenyls																					
Aroclor-1016	2.7	U	2.7	2.7	U	2.7	2.7	U	2.7	2.7	U	2.7	2.7	U	2.7	2.8	U	2.8	2.8	U	2.8
Aroclor-1221	7.7	U	7.7	7.9	U	7.9	7.7	U	7.7	7.9	U	7.9	7.8	U	7.8	8.1	U	8.1	8	U	8
Aroclor-1232	1.9	U	1.9	2	U	2	1.9	U	1.9	2	U	2	1.9	U	1.9	2	U	2	2	U	2
Aroclor-1242	4.5	U	4.5	4.6	U	4.6	4.5	U	4.5	4.6	U	4.6	4.5	U	4.5	4.7	U	4.7	4.7	U	4.7
Aroclor-1248	4.5	U	4.5	4.6	U	4.6	4.5	U	4.5	4.6	U	4.6	4.5	U	4.5	4.7	U	4.7	4.7	U	4.7
Aroclor-1254	2.5	U	2.5	2.6	U	2.6	2.5	U	2.5	2.6	U	2.6	2.5	U	2.5	2.6	U	2.6	2.6	U	2.6
Aroclor-1260	2.5	U	2.5	2.6	U	2.6	2.5	U	2.5	2.6	U	2.6	2.5	U	2.5	2.6	U	2.6	2.6	U	2.6
Semi-volatile Compounds																					
1,2,4-Trichlorobenzene	28	U	28	28	U	28	27	U	27	28	U	28	28	U	28	27	U	27	27	U	27
1,2-Dichlorobenzene	22	U	22	22	U	22	21	U	21	22	U	22	22	U	22	21	U	21	21	U	21
1,3-Dichlorobenzene	12	U	12	12	U	12	12	U	12	12	U	12	12	U	12	12	U	12	11	U	11
1,4-Dichlorobenzene	13	U	13	13	U	13	13	U	13	14	U	14	14	U	14	13	U	13	13	U	13
2,4,5-Trichlorophenol	9.8	U	9.8	9.9	U	9.9	9.6	U	9.6	9.9	U	9.9	9.9	U	9.9	9.7	U	9.7	9.5	U	9.5
2,4,6-Trichlorophenol	9.8	U	9.8	9.9	U	9.9	9.6	U	9.6	9.9	U	9.9	9.9	U	9.9	9.7	U	9.7	9.5	U	9.5
2,4-Dichlorophenol	9.8	U	9.8	9.9	U	9.9	9.6	U	9.6	9.9	U	9.9	9.9	U	9.9	9.7	U	9.7	9.5	U	9.5
2,4-Dimethylphenol	65	U	65	65	U	65	63	U	63	66	U	66	66	U	66	64	U	64	63	U	63
2,4-Dinitrophenol	330	U	330	330	U	330	320	U	320	330	UX	330	330	U	330	320	U	320	320	U	320
2,4-Dinitrotoluene	65	U	65	65	U	65	63	U	63	66	U	66	66	U	66	64	U	64	63	U	63
2,6-Dinitrotoluene	28	U	28	28	U	28	27	U	27	28	U	28	28	U	28	27	U	27	27	U	27

Table 3. Organic Compounds Statistical Sample Results Summary Table (2 of 8 Pages).

Sample Number	J1PW06			J1PW07			J1PW08			J1PW09			J1PW10			J1PW11			J1PW12		
Sample Date	7-25-2012			7-25-2012			7-25-2012			7-25-2012			7-25-2012			7-25-2012			7-25-2012		
Constituent	ug/kg	Q	PQL	ug/kg	Q	PQL	ug/kg	Q	PQL	ug/kg	Q	PQL	ug/kg	Q	PQL	ug/kg	Q	PQL	ug/kg	Q	PQL
2-Chloronaphthalene	9.8	U	9.8	9.9	U	9.9	9.6	U	9.6	9.9	U	9.9	9.9	U	9.9	9.7	U	9.7	9.5	U	9.5
2-Chlorophenol	21	U	21	21	U	21	20	U	20	21	U	21	21	U	21	20	U	20	20	U	20
2-Methylnaphthalene	19	U	19	19	U	19	18	U	18	19	U	19	19	U	19	18	U	18	18	U	18
2-Methylphenol (cresol, o-)	13	U	13	13	U	13	12	U	12	13	U	13	13	U	13	13	U	13	12	U	12
2-Nitroaniline	49	U	49	49	U	49	48	U	48	50	U	50	50	U	50	49	U	49	48	U	48
2-Nitrophenol	9.8	U	9.8	9.9	U	9.9	9.6	U	9.6	9.9	U	9.9	9.9	U	9.9	9.7	U	9.7	9.5	U	9.5
3+4 Methylphenol (cresol, m+p)	32	U	32	33	U	33	32	U	32	33	U	33	33	U	33	32	U	32	31	U	31
3,3'-Dichlorobenzidine	89	U	89	89	U	89	86	U	86	90	U	90	89	U	89	87	U	87	86	U	86
3-Nitroaniline	72	U	72	72	U	72	70	U	70	73	U	73	72	U	72	71	U	71	70	U	70
4,6-Dinitro-2-methylphenol	320	U	320	330	U	330	320	U	320	330	U	330	330	U	330	320	U	320	310	U	310
4-Bromophenylphenyl ether	19	U	19	19	U	19	18	U	18	19	U	19	19	U	19	18	U	18	18	U	18
4-Chloro-3-methylphenol	65	U	65	65	U	65	63	U	63	66	U	66	66	U	66	64	U	64	63	U	63
4-Chloroaniline	81	U	81	81	U	81	79	U	79	81	U	81	81	U	81	80	U	80	78	U	78
4-Chlorophenylphenyl ether	21	U	21	21	U	21	20	U	20	21	U	21	21	U	21	20	U	20	20	U	20
4-Nitroaniline	71	U	71	72	U	72	70	U	70	72	U	72	72	U	72	70	U	70	69	U	69
4-Nitrophenol	95	U	95	96	U	96	93	U	93	96	U	96	96	U	96	94	U	94	92	U	92
Acenaphthene	10	U	10	10	U	10	9.9	U	9.9	10	U	10	10	U	10	10	U	10	9.8	U	9.8
Acenaphthylene	17	U	17	17	U	17	16	U	16	17	U	17	17	U	17	17	U	17	16	U	16
Anthracene	17	U	17	17	U	17	16	U	16	17	U	17	17	U	17	17	U	17	16	U	16
Benzo(a)anthracene	20	U	20	20	U	20	19	U	19	20	U	20	20	U	20	65	J	19	19	U	19
Benzo(a)pyrene	20	U	20	20	U	20	19	U	19	20	U	20	20	U	20	92	J	19	19	U	19
Benzo(b)fluoranthene	26	U	26	26	U	26	25	U	25	26	U	26	26	U	26	150	JX	25	25	U	25
Benzo(ghi)perylene	16	U	16	16	U	16	15	U	15	16	U	16	16	U	16	71	J	16	15	U	15
Benzo(k)fluoranthene	39	U	39	40	U	40	38	U	38	40	U	40	40	U	40	39	UX	39	38	U	38
Bis(2-chloro-1-methylethyl)ether	23	U	23	23	U	23	22	U	22	23	U	23	23	U	23	22	U	22	22	U	22
Bis(2-Chloroethoxy)methane	23	U	23	23	U	23	22	U	22	23	U	23	23	U	23	22	U	22	22	U	22
Bis(2-chloroethyl) ether	16	U	16	16	U	16	16	U	16	17	U	17	16	U	16	16	U	16	16	U	16
Bis(2-ethylhexyl) phthalate	74	JB	45	73	JB	45	71	JB	44	76	JB	46	73	JB	46	77	JB	45	71	JB	44
Butylbenzylphthalate	42	U	42	42	U	42	41	U	41	43	U	43	43	U	43	42	U	42	41	U	41
Carbazole	35	U	35	36	U	36	35	U	35	36	U	36	36	U	36	35	U	35	34	U	34
Chrysene	27	U	27	27	U	27	26	U	26	27	U	27	27	U	27	94	J	26	26	U	26
Di-n-butylphthalate	29	U	29	29	U	29	28	U	28	29	U	29	29	U	29	28	U	28	28	U	28
Di-n-octylphthalate	76	J	14	14	U	14	14	U	14	14	U	14	14	U	14	14	U	14	14	U	14
Dibenz[a,h]anthracene	19	U	19	19	U	19	18	U	18	19	U	19	19	U	19	18	U	18	18	U	18

Table 3. Organic Compounds Statistical Sample Results Summary Table (3 of 8 Pages).

Sample Number	J1PW06			J1PW07			J1PW08			J1PW09			J1PW10			J1PW11			J1PW12		
Sample Date	7-25-2012			7-25-2012			7-25-2012			7-25-2012			7-25-2012			7-25-2012			7-25-2012		
Constituent	ug/kg	Q	PQL	ug/kg	Q	PQL	ug/kg	Q	PQL	ug/kg	Q	PQL	ug/kg	Q	PQL	ug/kg	Q	PQL	ug/kg	Q	PQL
Dibenzofuran	20	U	20	20	U	20	19	U	19	20	U	20	20	U	20	19	U	19	19	U	19
Diethyl phthalate	26	U	26	26	U	26	25	U	25	26	U	26	26	U	26	25	U	25	25	U	25
Dimethyl phthalate	23	U	23	23	U	23	22	U	22	23	U	23	23	U	23	22	U	22	22	U	22
Fluoranthene	35	U	35	36	U	36	35	U	35	36	U	36	36	U	36	100	J	35	34	U	34
Fluorene	18	U	18	18	U	18	17	U	17	18	U	18	18	U	18	17	U	17	17	U	17
Hexachlorobenzene	29	U	29	29	U	29	28	U	28	29	U	29	29	U	29	28	U	28	28	U	28
Hexachlorobutadiene	9.8	U	9.8	9.9	U	9.9	9.6	U	9.6	9.9	U	9.9	9.9	U	9.9	9.7	U	9.7	9.5	U	9.5
Hexachlorocyclopentadiene	49	U	49	49	U	49	48	U	48	50	U	50	50	U	50	49	U	49	48	U	48
Hexachloroethane	21	U	21	21	U	21	20	U	20	21	U	21	21	U	21	21	U	21	20	U	20
Indeno(1,2,3-cd)pyrene	22	U	22	22	U	22	21	U	21	22	U	22	22	U	22	55	J	21	21	U	21
Isophorone	17	U	17	17	U	17	16	U	16	17	U	17	17	U	17	17	U	17	16	U	16
N-Nitroso-di-n-dipropylamine	31	U	31	31	U	31	30	U	30	31	U	31	31	U	31	30	U	30	30	U	30
N-Nitrosodiphenylamine	21	U	21	21	U	21	20	U	20	21	U	21	21	U	21	20	U	20	20	U	20
Naphthalene	31	U	31	31	U	31	30	U	30	31	U	31	31	U	31	30	U	30	30	U	30
Nitrobenzene	22	U	22	22	U	22	21	U	21	22	U	22	22	U	22	21	U	21	21	U	21
Pentachlorophenol	320	U	320	330	U	330	320	U	320	330	U	330	330	U	330	320	U	320	310	U	310
Phenanthrene	17	U	17	17	U	17	16	U	16	17	U	17	17	U	17	36	J	17	16	U	16
Phenol	18	U	18	18	U	18	17	U	17	18	U	18	18	U	18	17	U	17	17	U	17
Pyrene	12	U	12	12	U	12	12	U	12	12	U	12	12	U	12	120	J	12	12	U	12
Volatile Organic Compounds																					
1,1,1-Trichloroethane	0.56	UX	0.56	0.65	U	0.65	0.67	U	0.67	0.69	U	0.69	0.57	U	0.57	0.64	U	0.64	0.49	U	0.49
1,1,2,2-Tetrachloroethane	0.65	UX	0.65	0.76	U	0.76	0.79	U	0.79	0.82	U	0.82	0.67	U	0.67	0.75	U	0.75	0.58	U	0.58
1,1,2-Trichloroethane	0.94	U	0.94	1.1	U	1.1	1.1	U	1.1	1.2	U	1.2	0.97	U	0.97	1.1	U	1.1	0.83	U	0.83
1,1-Dichloroethane	0.23	UX	0.23	0.26	U	0.26	0.27	U	0.27	0.28	U	0.28	0.23	U	0.23	0.26	U	0.26	0.2	U	0.2
1,1-Dichloroethene	0.63	U	0.63	0.73	U	0.73	0.77	U	0.77	0.79	U	0.79	0.65	U	0.65	0.72	U	0.72	0.56	U	0.56
1,2-Dichloroethane	0.75	U	0.75	0.87	U	0.87	0.91	U	0.91	0.94	U	0.94	0.77	U	0.77	0.86	U	0.86	0.66	U	0.66
1,2-Dichloroethene(Total)	0.42	UX	0.42	0.49	U	0.49	0.51	U	0.51	0.52	U	0.52	0.43	U	0.43	0.48	U	0.48	0.37	U	0.37
1,2-Dichloropropane	0.59	UX	0.59	0.68	U	0.68	0.71	U	0.71	0.73	U	0.73	0.6	U	0.6	0.67	U	0.67	0.52	U	0.52
2-Butanone	2	U	2	2.3	U	2.3	2.4	U	2.4	2.4	U	2.4	2	U	2	2.2	U	2.2	1.7	U	1.7
2-Hexanone	5.2	UX	5.2	6.1	U	6.1	6.3	U	6.3	6.5	U	6.5	5.4	U	5.4	6	U	6	4.6	U	4.6
4-Methyl-2-Pentanone	4.7	U	4.7	5.4	U	5.4	5.7	U	5.7	5.8	U	5.8	4.8	U	4.8	5.3	U	5.3	4.1	U	4.1
Acetone	9.4	J	5.8	8.7	J	6.7	7.7	J	7	7.2	U	7.2	5.9	U	5.9	9.5	J	6.6	9.2	J	5.1
Benzene	0.5	U	0.5	0.59	U	0.59	0.61	U	0.61	0.63	U	0.63	0.52	U	0.52	0.58	U	0.58	0.44	U	0.44
Bromodichloromethane	0.24	U	0.24	0.27	U	0.27	0.29	U	0.29	0.29	U	0.29	0.24	U	0.24	0.27	U	0.27	0.21	U	0.21

Table 3. Organic Compounds Statistical Sample Results Summary Table (4 of 8 Pages).

Sample Number	J1PW06			J1PW07			J1PW08			J1PW09			J1PW10			J1PW11			J1PW12		
Sample Date	7-25-2012			7-25-2012			7-25-2012			7-25-2012			7-25-2012			7-25-2012			7-25-2012		
Constituent	ug/kg	Q	PQL	ug/kg	Q	PQL	ug/kg	Q	PQL	ug/kg	Q	PQL	ug/kg	Q	PQL	ug/kg	Q	PQL	ug/kg	Q	PQL
Bromoform	0.25	U	0.25	0.29	U	0.29	0.3	U	0.3	0.31	U	0.31	0.25	U	0.25	0.28	U	0.28	0.22	U	0.22
Bromomethane	0.54	UX	0.54	0.62	U	0.62	0.65	U	0.65	0.67	U	0.67	0.55	U	0.55	0.61	U	0.61	0.47	U	0.47
Carbon disulfide	0.45	UX	0.45	0.52	U	0.52	0.54	U	0.54	0.56	U	0.56	0.46	U	0.46	0.52	U	0.52	0.4	U	0.4
Carbon tetrachloride	0.68	UX	0.68	0.78	U	0.78	0.82	U	0.82	0.84	U	0.84	0.69	U	0.69	0.77	U	0.77	0.6	U	0.6
Chlorobenzene	0.58	U	0.58	0.67	U	0.67	0.7	U	0.7	0.72	U	0.72	0.59	U	0.59	0.66	U	0.66	0.51	U	0.51
Chloroethane	0.95	U	0.95	1.1	U	1.1	1.2	U	1.2	1.2	U	1.2	0.98	U	0.98	1.1	U	1.1	0.84	U	0.84
Chloroform	0.31	U	0.31	0.36	U	0.36	0.38	U	0.38	0.39	U	0.39	0.32	U	0.32	0.36	U	0.36	0.27	U	0.27
Chloromethane	0.83	U	0.83	0.96	U	0.96	1	U	1	1	U	1	0.85	U	0.85	0.94	U	0.94	0.73	U	0.73
cis-1,3-Dichloropropene	1.4	UX	1.4	1.6	U	1.6	1.7	U	1.7	1.7	U	1.7	1.4	U	1.4	1.6	U	1.6	1.2	U	1.2
Dibromochloromethane	0.61	U	0.61	0.71	U	0.71	0.74	U	0.74	0.76	U	0.76	0.63	U	0.63	0.7	U	0.7	0.54	U	0.54
Ethylbenzene	0.72	UX	0.72	0.83	U	0.83	0.87	U	0.87	0.9	U	0.9	0.74	U	0.74	0.82	U	0.82	0.63	U	0.63
Methylenechloride	7.1	X	1.7	12		2	2.1	U	2.1	3.3	J	2.1	6.5		1.8	2	U	2	1.5	J	1.5
Styrene	0.68	UX	0.68	1.2	J	0.78	0.82	U	0.82	0.84	U	0.84	0.69	U	0.69	0.77	U	0.77	0.6	U	0.6
Tetrachloroethene	0.63	U	0.63	0.73	U	0.73	0.77	U	0.77	0.79	U	0.79	0.65	U	0.65	0.72	U	0.72	0.56	U	0.56
Toluene	0.74	U	0.74	0.86	U	0.86	0.9	U	0.9	0.92	U	0.92	0.76	U	0.76	0.85	U	0.85	0.65	U	0.65
trans-1,3-Dichloropropene	0.72	U	0.72	0.83	U	0.83	0.87	U	0.87	0.9	U	0.9	0.74	U	0.74	0.82	U	0.82	0.63	U	0.63
Trichloroethene	0.25	U	0.25	0.29	U	0.29	0.3	U	0.3	0.31	U	0.31	0.25	U	0.25	0.28	U	0.28	0.22	U	0.22
Vinyl chloride	1.4	U	1.4	1.7	U	1.7	1.7	U	1.7	1.8	U	1.8	1.5	U	1.5	1.6	U	1.6	1.3	U	1.3
Xylenes (total)	0.65	UX	0.65	0.76	U	0.76	0.79	U	0.79	0.82	U	0.82	0.67	U	0.67	0.75	U	0.75	0.58	U	0.58

Table 3. Organic Compounds Statistical Sample Results Summary Table (5 of 8 Pages).

Sample Number	J1PW13			J1PW14			J1PW15			J1PW16			J1PW17			J1PW18			J1PW19		
Sample Date	7-25-2012			7-25-2012			7-25-2012			7-25-2012			7-25-2012			7-25-2012			7-25-2012		
Constituent	ug/kg	Q	PQL	ug/kg	Q	PQL	ug/kg	Q	PQL	ug/kg	Q	PQL	ug/kg	Q	PQL	ug/kg	Q	PQL	ug/kg	Q	PQL
Polycyclic aromatic Hydrocarbons																					
Acenaphthene	9.9	U	9.9	9.9	U	9.9	10	U	10	10	U	10	9.9	U	9.9	9.9	U	9.9	9.9	U	9.9
Acenaphthylene	8.9	U	8.9	8.9	U	8.9	9	U	9	9.1	U	9.1	8.9	U	8.9	8.9	U	8.9	8.9	U	8.9
Anthracene	3	U	3	1100		3	13	J	3	3.1	U	3.1	3	U	3	3	J	3	10	J	3
Benzo(a)anthracene	3.2	U	3.2	2700		3.2	54		3.2	3.2	U	3.2	3.2	U	3.2	7.8	JX	3.2	15	X	3.2
Benzo(a)pyrene	6.4	U	6.4	3100		6.3	59		6.4	6.5	U	6.5	6.3	U	6.3	22		6.3	32		6.4
Benzo(b)fluoranthene	4.2	U	4.2	2500		4.2	65		4.2	4.2	U	4.2	4.2	U	4.2	22		4.2	40		4.2
Benzo(ghi)perylene	7.2	U	7.2	1800		7.1	44	X	7.2	7.2	U	7.2	7.1	U	7.1	11	JX	7.1	17	JX	7.1
Benzo(k)fluoranthene	3.9	U	3.9	1600		3.9	27		3.9	4	U	4	3.9	U	3.9	20		3.9	15		3.9
Chrysene	4.8	U	4.8	3300		4.8	65		4.8	4.9	U	4.9	4.8	U	4.8	23	J	4.8	34	J	4.8
Dibenz[a,h]anthracene	11	U	11	470	X	11	11	U	11	11	U	11	11	U	11	11	U	11	11	U	11
Fluoranthene	13	U	13	5700		13	99	X	13	13	U	13	13	U	13	13	U	13	62		13
Fluorene	5.2	U	5.2	760		5.2	9.4	J	5.3	5.3	U	5.3	5.2	U	5.2	5.2	U	5.2	5.2	U	5.2
Indeno(1,2,3-cd)pyrene	12	U	12	12	U	12	52		12	12	U	12	12	U	12	24	J	12	32		12
Naphthalene	12	U	12	12	U	12	12	U	12	12	U	12	12	U	12	12	U	12	12	U	12
Phenanthrene	12	U	12	4700		12	36	J	12	12	U	12	12	U	12	12	U	12	29	J	12
Pyrene	12	U	12	6200		12	110		12	12	U	12	12	U	12	12	U	12	67		12
Polychlorinated Biphenyls																					
Aroclor-1016	2.6	U	2.6	2.7	U	2.7	2.8	U	2.8	2.7	U	2.7	2.7	U	2.7	2.8	U	2.8	2.7	U	2.7
Aroclor-1221	7.4	U	7.4	7.9	U	7.9	8	U	8	7.9	U	7.9	7.8	U	7.8	8	U	8	8	U	8
Aroclor-1232	1.8	U	1.8	2	U	2	2	U	2	2	U	2	2	U	2	2	U	2	2	U	2
Aroclor-1242	4.3	U	4.3	4.6	U	4.6	4.6	U	4.6	4.6	U	4.6	4.6	U	4.6	4.6	U	4.6	4.6	U	4.6
Aroclor-1248	4.3	U	4.3	4.6	U	4.6	4.6	U	4.6	4.6	U	4.6	4.6	U	4.6	4.6	U	4.6	4.6	U	4.6
Aroclor-1254	2.4	U	2.4	16		2.6	2.6	U	2.6	2.6	U	2.6	2.5	U	2.5	2.6	U	2.6	2.6	U	2.6
Aroclor-1260	2.4	U	2.4	10	P	2.6	52		2.6	2.6	U	2.6	2.5	U	2.5	2.6	U	2.6	2.6	U	2.6
Semi-volatile Compounds																					
1,2,4-Trichlorobenzene	27	U	27	28	U	28	27	U	27	27	U	27	27	U	27	27	U	27	27	U	27
1,2-Dichlorobenzene	21	U	21	22	U	22	22	U	22	21	U	21	22	U	22	21	U	21	21	U	21
1,3-Dichlorobenzene	12	U	12	12	U	12	12	U	12	12	U	12	12	U	12	12	U	12	12	U	12
1,4-Dichlorobenzene	13	U	13	14	U	14	13	U	13	13	U	13	13	U	13	13	U	13	13	U	13
2,4,5-Trichlorophenol	9.7	U	9.7	10	U	10	9.8	U	9.8	9.7	U	9.7	9.8	U	9.8	9.6	U	9.6	9.6	U	9.6
2,4,6-Trichlorophenol	9.7	U	9.7	10	U	10	9.8	U	9.8	9.7	U	9.7	9.8	U	9.8	9.6	U	9.6	9.6	U	9.6
2,4-Dichlorophenol	9.7	U	9.7	10	U	10	9.8	U	9.8	9.7	U	9.7	9.8	U	9.8	9.6	U	9.6	9.6	U	9.6
2,4-Dimethylphenol	64	U	64	66	U	66	65	U	65	64	U	64	65	U	65	63	U	63	64	U	64
2,4-Dinitrophenol	320	U	320	330	U	330	330	U	330	320	U	320	330	U	330	320	U	320	320	U	320
2,4-Dinitrotoluene	64	U	64	66	U	66	65	U	65	64	U	64	65	U	65	63	U	63	64	U	64
2,6-Dinitrotoluene	27	U	27	28	U	28	27	U	27	27	U	27	27	U	27	27	U	27	27	U	27

Table 3. Organic Compounds Statistical Sample Results Summary Table (6 of 8 Pages).

Sample Number	J1PW13			J1PW14			J1PW15			J1PW16			J1PW17			J1PW18			J1PW19		
Sample Date	7-25-2012			7-25-2012			7-25-2012			7-25-2012			7-25-2012			7-25-2012			7-25-2012		
Constituent	ug/kg	Q	PQL	ug/kg	Q	PQL	ug/kg	Q	PQL	ug/kg	Q	PQL	ug/kg	Q	PQL	ug/kg	Q	PQL	ug/kg	Q	PQL
2-Chloronaphthalene	9.7	U	9.7	10	U	10	9.8	U	9.8	9.7	U	9.7	9.8	U	9.8	9.6	U	9.6	9.6	U	9.6
2-Chlorophenol	20	U	20	21	U	21	21	U	21	20	U	20	21	U	21	20	U	20	20	U	20
2-Methylnaphthalene	18	U	18	31	J	19	19	U	19	18	U	18	19	U	19	18	U	18	18	U	18
2-Methylphenol (cresol, o-)	13	U	13	13	U	13	13	U	13	13	U	13	13	U	13	12	U	12	13	U	13
2-Nitroaniline	48	U	48	50	U	50	49	U	49	49	U	49	49	U	49	48	U	48	48	U	48
2-Nitrophenol	9.7	U	9.7	10	U	10	9.8	U	9.8	9.7	U	9.7	9.8	U	9.8	9.6	U	9.6	9.6	U	9.6
3+4 Methylphenol (cresol, m+p)	32	U	32	33	U	33	32	U	32	32	U	32	32	U	32	32	U	32	32	U	32
3,3'-Dichlorobenzidine	87	U	87	90	U	90	88	U	88	87	U	87	88	U	88	86	U	86	87	U	87
3-Nitroaniline	70	U	70	73	U	73	72	U	72	71	U	71	71	U	71	70	U	70	70	U	70
4,6-Dinitro-2-methylphenol	320	U	320	330	U	330	320	U	320	320	U	320	320	U	320	320	U	320	320	U	320
4-Bromophenylphenyl ether	18	U	18	19	U	19	19	U	19	18	U	18	19	U	19	18	U	18	18	U	18
4-Chloro-3-methylphenol	64	U	64	66	U	66	65	U	65	64	U	64	65	U	65	63	U	63	64	U	64
4-Chloroaniline	79	U	79	82	U	82	80	U	80	80	U	80	80	U	80	79	U	79	79	U	79
4-Chlorophenylphenyl ether	20	U	20	21	U	21	21	U	21	20	U	20	21	U	21	20	U	20	20	U	20
4-Nitroaniline	70	U	70	73	U	73	71	U	71	70	U	70	71	U	71	70	U	70	70	U	70
4-Nitrophenol	94	U	94	97	U	97	95	U	95	94	U	94	95	U	95	93	U	93	93	U	93
Acenaphthene	9.9	U	9.9	120	J	10	10	U	10	10	U	10	10	U	10	9.9	U	9.9	9.9	U	9.9
Acenaphthylene	16	U	16	17	U	17	17	U	17	17	U	17	17	U	17	16	U	16	16	U	16
Anthracene	16	U	16	370		17	17	U	17	17	U	17	17	U	17	16	U	16	16	U	16
Benzo(a)anthracene	19	U	19	1800		20	73	J	20	19	U	19	20	U	20	19	U	19	24	J	19
Benzo(a)pyrene	19	U	19	1900		20	77	J	20	19	U	19	20	U	20	1000		19	26	J	19
Benzo(b)fluoranthene	25	U	25	2900	X	26	120	JX	26	25	U	25	26	U	26	1600	X	25	42	JX	25
Benzo(ghi)perylene	15	U	15	1200		16	48	J	16	16	U	16	16	U	16	15	U	15	20	J	15
Benzo(k)fluoranthene	39	U	39	40	UX	40	39	UX	39	39	U	39	39	U	39	38	UX	38	39	UX	39
Bis(2-chloro-1-methylethyl)ether	22	U	22	23	U	23	23	U	23	22	U	22	22	U	22	22	U	22	22	U	22
Bis(2-Chloroethoxy)methane	22	U	22	23	U	23	23	U	23	22	U	22	22	U	22	22	U	22	22	U	22
Bis(2-chloroethyl) ether	16	U	16	17	U	17	16	U	16	16	U	16	16	U	16	16	U	16	16	U	16
Bis(2-ethylhexyl) phthalate	72	JB	44	82	JB	46	86	JB	45	76	JB	45	77	JB	45	76	JB	44	73	JB	44
Butylbenzylphthalate	42	U	42	43	U	43	42	U	42	42	U	42	42	U	42	41	U	41	41	U	41
Carbazole	35	U	35	210	J	36	35	U	35	35	U	35	35	U	35	35	U	35	35	U	35
Chrysene	26	U	26	2200		27	92	J	26	26	U	26	26	U	26	26	U	26	27	J	26
Di-n-butylphthalate	28	U	28	29	U	29	28	U	28	28	U	28	28	U	28	28	U	28	28	U	28
Di-n-octylphthalate	14	U	14	14	U	14	14	U	14	14	U	14	14	U	14	14	U	14	14	U	14
Dibenz[a,h]anthracene	18	U	18	19	U	19	19	U	19	18	U	18	19	U	19	18	U	18	18	U	18

Table 3. Organic Compounds Statistical Sample Results Summary Table (7 of 8 Pages).

Sample Number	J1PW13			J1PW14			J1PW15			J1PW16			J1PW17			J1PW18			J1PW19		
Sample Date	7-25-2012			7-25-2012			7-25-2012			7-25-2012			7-25-2012			7-25-2012			7-25-2012		
Constituent	ug/kg	Q	PQL	ug/kg	Q	PQL	ug/kg	Q	PQL	ug/kg	Q	PQL	ug/kg	Q	PQL	ug/kg	Q	PQL	ug/kg	Q	PQL
Dibenzofuran	19	U	19	75	J	20	20	U	20	19	U	19	20	U	20	19	U	19	19	U	19
Diethyl phthalate	25	U	25	26	U	26	25	U	25	25	U	25	25	U	25	25	U	25	25	U	25
Dimethyl phthalate	22	U	22	23	U	23	23	U	23	22	U	22	22	U	22	22	U	22	22	U	22
Fluoranthene	35	U	35	2900		36	120	J	35	35	U	35	35	U	35	35	U	35	35	U	35
Fluorene	17	U	17	100	J	18	18	U	18	17	U	17	18	U	18	17	U	17	17	U	17
Hexachlorobenzene	28	U	28	29	U	29	28	U	28	28	U	28	28	U	28	28	U	28	28	U	28
Hexachlorobutadiene	9.7	U	9.7	10	U	10	9.8	U	9.8	9.7	U	9.7	9.8	U	9.8	9.6	U	9.6	9.6	U	9.6
Hexachlorocyclopentadiene	48	U	48	50	U	50	49	U	49	49	U	49	49	U	49	48	U	48	48	U	48
Hexachloroethane	21	U	21	21	U	21	21	U	21	21	U	21	21	U	21	20	U	20	21	U	21
Indeno(1,2,3-cd)pyrene	21	U	21	1100		22	40	J	22	21	U	21	22	U	22	21	U	21	21	U	21
Isophorone	16	U	16	17	U	17	17	U	17	17	U	17	17	U	17	16	U	16	16	U	16
N-Nitroso-di-n-dipropylamine	30	U	30	31	U	31	30	U	30	30	U	30	30	U	30	30	U	30	30	U	30
N-Nitrosodiphenylamine	20	U	20	21	U	21	21	U	21	20	U	20	21	U	21	20	U	20	20	U	20
Naphthalene	30	U	30	31	U	31	30	U	30	30	U	30	30	U	30	30	U	30	30	U	30
Nitrobenzene	21	U	21	22	U	22	22	U	22	21	U	21	22	U	22	21	U	21	21	U	21
Pentachlorophenol	320	U	320	330	U	330	320	U	320	320	U	320	320	U	320	320	U	320	320	U	320
Phenanthrene	16	U	16	1700		17	57	J	17	17	U	17	17	U	17	16	U	16	16	U	16
Phenol	17	U	17	18	U	18	18	U	18	17	U	17	18	U	18	17	U	17	17	U	17
Pyrene	12	U	12	3100		12	130	J	12	12	U	12	12	U	12	12	U	12	34	J	12
Volatile Organic Compounds																					
1,1,1-Trichloroethane	0.55	U	0.55	0.46	U	0.46	0.51	U	0.51	0.6	U	0.6	0.61	U	0.61	0.62	U	0.62	0.79	U	0.79
1,1,2,2-Tetrachloroethane	0.65	U	0.65	0.54	U	0.54	0.59	U	0.59	0.71	U	0.71	0.72	U	0.72	0.72	U	0.72	0.92	U	0.92
1,1,2-Trichloroethane	0.93	U	0.93	0.77	U	0.77	0.86	U	0.86	1	U	1	1	U	1	1	U	1	1.3	U	1.3
1,1-Dichloroethane	0.22	U	0.22	0.18	U	0.18	0.2	U	0.2	0.24	U	0.24	0.25	U	0.25	0.25	U	0.25	0.32	U	0.32
1,1-Dichloroethene	0.62	U	0.62	0.52	U	0.52	0.58	U	0.58	0.69	U	0.69	0.7	U	0.7	0.7	U	0.7	0.89	U	0.89
1,2-Dichloroethane	0.74	U	0.74	0.61	U	0.61	0.68	U	0.68	0.81	U	0.81	0.83	U	0.83	0.83	U	0.83	1.1	U	1.1
1,2-Dichloroethene(Total)	0.41	U	0.41	0.34	U	0.34	0.38	U	0.38	0.45	U	0.45	0.46	U	0.46	0.46	U	0.46	0.59	U	0.59
1,2-Dichloropropane	0.58	U	0.58	0.48	U	0.48	0.54	U	0.54	0.64	U	0.64	0.65	U	0.65	0.65	U	0.65	0.83	U	0.83
2-Butanone	1.9	U	1.9	1.6	U	1.6	1.8	U	1.8	2.1	U	2.1	2.2	U	2.2	2.2	U	2.2	2.8	U	2.8
2-Hexanone	5.2	U	5.2	4.3	U	4.3	4.8	U	4.8	5.7	U	5.7	5.8	U	5.8	5.8	U	5.8	7.4	U	7.4
4-Methyl-2-Pentanone	4.6	U	4.6	3.8	U	3.8	4.3	U	4.3	5.1	U	5.1	5.1	U	5.1	5.2	U	5.2	6.6	U	6.6
Acetone	6.5	J	5.7	6.8	J	4.7	7.9	J	5.2	13	J	6.2	8	J	6.3	6.4	U	6.4	8.2	U	8.2
Benzene	0.5	U	0.5	0.41	U	0.41	0.46	U	0.46	0.55	U	0.55	0.55	U	0.55	0.56	U	0.56	0.71	U	0.71
Bromodichloromethane	0.23	U	0.23	0.19	U	0.19	0.21	U	0.21	0.26	U	0.26	0.26	U	0.26	0.26	U	0.26	0.33	U	0.33

Table 3. Organic Compounds Statistical Sample Results Summary Table (8 of 8 Pages).

Sample Number	J1PW13			J1PW14			J1PW15			J1PW16			J1PW17			J1PW18			J1PW19		
Sample Date	7-25-2012			7-25-2012			7-25-2012			7-25-2012			7-25-2012			7-25-2012			7-25-2012		
Constituent	ug/kg	Q	PQL	ug/kg	Q	PQL	ug/kg	Q	PQL	ug/kg	Q	PQL	ug/kg	Q	PQL	ug/kg	Q	PQL	ug/kg	Q	PQL
Bromoform	0.24	U	0.24	0.2	U	0.2	0.22	U	0.22	0.27	U	0.27	0.27	U	0.27	0.27	U	0.27	0.35	U	0.35
Bromomethane	0.53	U	0.53	0.44	U	0.44	0.49	U	0.49	0.58	U	0.58	0.59	U	0.59	0.59	U	0.59	0.76	U	0.76
Carbon disulfide	0.44	U	0.44	0.37	U	0.37	0.41	U	0.41	0.49	U	0.49	0.5	U	0.5	0.5	U	0.5	0.64	U	0.64
Carbon tetrachloride	0.67	U	0.67	0.55	U	0.55	0.61	U	0.61	0.73	U	0.73	0.74	U	0.74	0.75	U	0.75	0.95	U	0.95
Chlorobenzene	0.57	U	0.57	0.47	U	0.47	0.53	U	0.53	0.63	U	0.63	0.64	U	0.64	0.64	U	0.64	0.82	U	0.82
Chloroethane	0.94	U	0.94	0.78	U	0.78	0.87	U	0.87	1	U	1	1	U	1	1.1	U	1.1	1.3	U	1.3
Chloroform	0.31	U	0.31	0.25	U	0.25	0.28	U	0.28	0.34	U	0.34	0.34	U	0.34	0.34	U	0.34	0.44	U	0.44
Chloromethane	0.82	U	0.82	0.68	U	0.68	0.75	U	0.75	0.89	U	0.89	0.91	U	0.91	0.91	U	0.91	1.2	U	1.2
cis-1,3-Dichloropropene	1.4	U	1.4	1.1	U	1.1	1.3	U	1.3	1.5	U	1.5	1.5	U	1.5	1.5	U	1.5	2	U	2
Dibromochloromethane	0.6	U	0.6	0.5	U	0.5	0.56	U	0.56	0.66	U	0.66	0.67	U	0.67	0.68	U	0.68	0.86	U	0.86
Ethylbenzene	0.71	U	0.71	0.59	U	0.59	0.65	U	0.65	0.78	U	0.78	0.79	U	0.79	0.8	U	0.8	1	U	1
Methylenechloride	6.2		1.7	3.6	J	1.4	5.6		1.6	12		1.9	8.6		1.9	1.9	U	1.9	4.7	J	2.4
Styrene	0.67	U	0.67	0.55	U	0.55	0.61	U	0.61	0.73	U	0.73	0.74	U	0.74	0.75	U	0.75	0.95	U	0.95
Tetrachloroethene	0.62	U	0.62	0.52	U	0.52	0.58	U	0.58	0.69	U	0.69	0.7	U	0.7	0.7	U	0.7	0.89	U	0.89
Toluene	0.73	U	0.73	0.61	U	0.61	0.67	U	0.67	0.8	U	0.8	0.81	U	0.81	0.82	U	0.82	1	U	1
trans-1,3-Dichloropropene	0.71	U	0.71	0.59	U	0.59	0.65	U	0.65	0.78	U	0.78	0.79	U	0.79	0.8	U	0.8	1	U	1
Trichloroethene	0.24	U	0.24	0.2	U	0.2	0.22	U	0.22	0.27	U	0.27	0.27	U	0.27	0.27	U	0.27	0.35	U	0.35
Vinyl chloride	1.4	U	1.4	1.2	U	1.2	1.3	U	1.3	1.6	U	1.6	1.6	U	1.6	1.6	U	1.6	2	U	2
Xylenes (total)	0.65	U	0.65	0.54	U	0.54	0.59	U	0.59	0.71	U	0.71	0.72	U	0.72	0.72	U	0.72	0.92	U	0.92

Table 4. Organic Compounds Focused Sample Results Summary Table (1 of 4 Pages).

Sample Number	J1PW34			J1PW35			J1PW36			J1PW37		
Sample Date	7-25-2012			7-25-2012			7-25-2012			7-25-2012		
Constituent	ug/kg	Q	PQL	ug/kg	Q	PQL	ug/kg	Q	PQL	ug/kg	Q	PQL
Polycyclic aromatic Hydrocarbons												
Acenaphthene	9.6	U	9.6	10	U	10	9.7	U	9.7	180	X	10
Acenaphthylene	8.7	U	8.7	9.1	U	9.1	8.7	U	8.7	9	U	9
Anthracene	2.9	U	2.9	3.1	U	3.1	2.9	U	2.9	200		3.1
Benzo(a)anthracene	3.1	U	3.1	3.2	U	3.2	3.1	U	3.1	940		3.2
Benzo(a)pyrene	6.2	U	6.2	11	J	6.5	6.2	U	6.2	1000		6.4
Benzo(b)fluoranthene	4	U	4	9.6	J	4.2	4.1	U	4.1	890		4.2
Benzo(ghi)perylene	6.9	U	6.9	7.2	U	7.2	7	U	7	620		7.2
Benzo(k)fluoranthene	3.8	U	3.8	4	U	4	3.8	U	3.8	560		4
Chrysene	4.7	U	4.7	8.3	J	4.9	4.7	U	4.7	1100		4.9
Dibenz[a,h]anthracene	11	U	11	11	U	11	11	U	11	180	X	11
Fluoranthene	12	U	12	13	J	13	13	U	13	1400	X	13
Fluorene	5.1	U	5.1	5.3	U	5.3	5.1	U	5.1	130	X	5.3
Indeno(1,2,3-cd)pyrene	12	U	12	12	U	12	12	U	12	580		12
Naphthalene	12	U	12	12	U	12	12	U	12	12	U	12
Phenanthrene	12	U	12	12	U	12	12	U	12	560		12
Pyrene	12	U	12	15	J	12	12	U	12	1700		12
Polychlorinated Biphenyls												
Aroclor-1016	2.7	U	2.7	2.6	U	2.6	2.7	U	2.7	2.7	U	2.7
Aroclor-1221	7.8	U	7.8	7.6	U	7.6	7.9	U	7.9	7.7	U	7.7
Aroclor-1232	2	U	2	1.9	U	1.9	2	U	2	1.9	U	1.9
Aroclor-1242	4.6	U	4.6	4.4	U	4.4	4.6	U	4.6	4.5	U	4.5
Aroclor-1248	4.6	U	4.6	4.4	U	4.4	4.6	U	4.6	4.5	U	4.5
Aroclor-1254	2.5	U	2.5	2.5	U	2.5	2.6	U	2.6	7.7	JP	2.5
Aroclor-1260	2.5	U	2.5	44		2.5	2.6	U	2.6	9.6		2.5
Semi-volatile Compounds												
1,2,4-Trichlorobenzene	28	U	28	28	U	28	28	U	28	28	U	28
1,2-Dichlorobenzene	22	U	22	22	U	22	22	U	22	22	U	22
1,3-Dichlorobenzene	12	U	12	12	U	12	12	U	12	12	U	12
1,4-Dichlorobenzene	13	U	13	14	U	14	13	U	13	14	U	14
2,4,5-Trichlorophenol	9.9	U	9.9	10	U	10	9.9	U	9.9	10	U	10
2,4,6-Trichlorophenol	9.9	U	9.9	10	U	10	9.9	U	9.9	10	U	10
2,4-Dichlorophenol	9.9	U	9.9	10	U	10	9.9	U	9.9	10	U	10
2,4-Dimethylphenol	65	U	65	66	U	66	65	U	65	66	U	66
2,4-Dinitrophenol	330	UX	330	330	U	330	330	U	330	340	U	340
2,4-Dinitrotoluene	65	U	65	66	U	66	65	U	65	66	U	66
2,6-Dinitrotoluene	28	U	28	28	U	28	28	U	28	28	U	28

Table 4. Organic Compounds Focused Sample Results Summary Table (2 of 4 Pages).

Sample Number	J1PW34			J1PW35			J1PW36			J1PW37		
Sample Date	7-25-2012			7-25-2012			7-25-2012			7-25-2012		
Constituent	ug/kg	Q	PQL	ug/kg	Q	PQL	ug/kg	Q	PQL	ug/kg	Q	PQL
2-Chloronaphthalene	9.9	U	9.9	10	U	10	9.9	U	9.9	10	U	10
2-Chlorophenol	21	U	21	21	U	21	21	U	21	21	U	21
2-Methylnaphthalene	19	U	19	19	U	19	19	U	19	19	U	19
2-Methylphenol (cresol, o-)	13	U	13	13	U	13	13	U	13	13	U	13
2-Nitroaniline	49	U	49	50	U	50	49	U	49	50	U	50
2-Nitrophenol	9.9	U	9.9	10	U	10	9.9	U	9.9	10	U	10
3+4 Methylphenol (cresol, m+p)	33	U	33	33	U	33	33	U	33	33	U	33
3,3'-Dichlorobenzidine	89	U	89	90	U	90	89	U	89	91	U	91
3-Nitroaniline	72	U	72	73	U	73	72	U	72	73	U	73
4,6-Dinitro-2-methylphenol	330	UX	330	330	U	330	330	U	330	330	U	330
4-Bromophenylphenyl ether	19	U	19	19	U	19	19	U	19	19	U	19
4-Chloro-3-methylphenol	65	U	65	66	U	66	65	U	65	66	U	66
4-Chloroaniline	81	U	81	82	U	82	81	U	81	82	U	82
4-Chlorophenylphenyl ether	21	U	21	21	U	21	21	U	21	21	U	21
4-Nitroaniline	72	U	72	72	U	72	72	U	72	73	U	73
4-Nitrophenol	96	U	96	97	U	97	96	U	96	98	U	98
Acenaphthene	10	U	10	10	U	10	10	U	10	23	J	10
Acenaphthylene	17	U	17	17	U	17	17	U	17	17	U	17
Anthracene	17	U	17	17	U	17	17	U	17	63	J	17
Benzo(a)anthracene	20	U	20	20	U	20	20	U	20	380		20
Benzo(a)pyrene	20	U	20	20	U	20	20	U	20	430		20
Benzo(b)fluoranthene	26	U	26	26	UX	26	26	U	26	670	X	26
Benzo(ghi)perylene	16	U	16	16	J	16	16	U	16	280	J	16
Benzo(k)fluoranthene	39	U	39	40	UX	40	40	U	40	40	UX	40
Bis(2-chloro-1-methylethyl)ether	23	U	23	23	U	23	23	U	23	23	U	23
Bis(2-Chloroethoxy)methane	23	U	23	23	U	23	23	U	23	23	U	23
Bis(2-chloroethyl) ether	16	U	16	17	U	17	16	U	16	17	U	17
Bis(2-ethylhexyl) phthalate	74	JB	45	76	JB	46	74	JB	45	87	JB	46
Butylbenzylphthalate	42	UX	42	43	U	43	42	U	42	43	U	43
Carbazole	36	U	36	36	U	36	36	U	36	39	J	36
Chrysene	27	U	27	27	U	27	27	U	27	470		27
Di-n-butylphthalate	29	U	29	29	U	29	29	U	29	29	U	29
Di-n-octylphthalate	14	U	14	14	U	14	14	U	14	14	U	14
Dibenz[a,h]anthracene	19	U	19	19	U	19	19	U	19	19	U	19

Table 4. Organic Compounds Focused Sample Results Summary Table (3 of 4 Pages).

Sample Number	J1PW34			J1PW35			J1PW36			J1PW37		
Sample Date	7-25-2012			7-25-2012			7-25-2012			7-25-2012		
Constituent	ug/kg	Q	PQL	ug/kg	Q	PQL	ug/kg	Q	PQL	ug/kg	Q	PQL
Dibenzofuran	20	U	20	20	U	20	20	U	20	20	U	20
Diethyl phthalate	26	U	26	26	U	26	26	U	26	26	U	26
Dimethyl phthalate	23	U	23	23	U	23	23	U	23	23	U	23
Fluoranthene	36	U	36	36	U	36	36	U	36	600		36
Fluorene	18	U	18	18	U	18	18	U	18	18	U	18
Hexachlorobenzene	29	U	29	29	U	29	29	U	29	29	U	29
Hexachlorobutadiene	9.9	U	9.9	10	U	10	9.9	U	9.9	10	U	10
Hexachlorocyclopentadiene	49	U	49	50	U	50	49	U	49	50	U	50
Hexachloroethane	21	U	21	21	U	21	21	U	21	21	U	21
Indeno(1,2,3-cd)pyrene	22	U	22	22	U	22	22	U	22	240	J	22
Isophorone	17	U	17	17	U	17	17	U	17	17	U	17
N-Nitroso-di-n-dipropylamine	31	U	31	31	U	31	31	U	31	31	U	31
N-Nitrosodiphenylamine	21	U	21	21	U	21	21	U	21	21	U	21
Naphthalene	31	U	31	31	U	31	31	U	31	31	U	31
Nitrobenzene	22	U	22	22	U	22	22	U	22	22	U	22
Pentachlorophenol	330	U	330	330	U	330	330	U	330	330	U	330
Phenanthrene	17	U	17	17	U	17	17	U	17	310	J	17
Phenol	18	U	18	18	U	18	18	U	18	18	U	18
Pyrene	12	U	12	14	J	12	12	U	12	630		12
Volatile Organic Compounds												
1,1,1-Trichloroethane	0.64	U	0.64	0.64	U	0.64	1	U	1	0.56	U	0.56
1,1,2,2-Tetrachloroethane	0.75	U	0.75	0.75	U	0.75	1.2	U	1.2	0.66	U	0.66
1,1,2-Trichloroethane	1.1	U	1.1	1.1	U	1.1	1.7	U	1.7	0.95	U	0.95
1,1-Dichloroethane	0.26	U	0.26	0.26	U	0.26	0.41	U	0.41	0.23	U	0.23
1,1-Dichloroethene	0.73	U	0.73	0.75	J	0.73	1.1	U	1.1	0.67	J	0.64
1,2-Dichloroethane	0.86	U	0.86	0.86	U	0.86	1.4	U	1.4	0.76	U	0.76
1,2-Dichloroethene(Total)	0.48	U	0.48	0.48	U	0.48	0.76	U	0.76	0.42	U	0.42
1,2-Dichloropropane	0.68	U	0.68	0.68	U	0.68	1.1	U	1.1	0.6	U	0.6
2-Butanone	2.3	U	2.3	2.2	U	2.2	3.6	U	3.6	2	U	2
2-Hexanone	6	U	6	6	U	6	9.5	U	9.5	5.3	U	5.3
4-Methyl-2-Pentanone	5.4	U	5.4	5.4	U	5.4	8.5	U	8.5	4.7	U	4.7
Acetone	6.6	U	6.6	6.8	J	6.6	10	U	10	7.3	J	5.8
Benzene	0.58	U	0.58	0.58	U	0.58	0.91	U	0.91	0.51	U	0.51
Bromodichloromethane	0.27	U	0.27	0.27	U	0.27	0.43	U	0.43	0.24	U	0.24

Table 4. Organic Compounds Focused Sample Results Summary Table (4 of 4 Pages).

Sample Number	J1PW34			J1PW35			J1PW36			J1PW37		
Sample Date	7-25-2012			7-25-2012			7-25-2012			7-25-2012		
Constituent	ug/kg	Q	PQL	ug/kg	Q	PQL	ug/kg	Q	PQL	ug/kg	Q	PQL
Bromoform	0.28	U	0.28	0.28	U	0.28	0.45	U	0.45	0.25	U	0.25
Bromomethane	0.62	U	0.62	0.61	U	0.61	0.97	U	0.97	0.54	U	0.54
Carbon disulfide	0.52	U	0.52	0.52	U	0.52	0.82	U	0.82	0.45	U	0.45
Carbon tetrachloride	0.78	U	0.78	0.77	U	0.77	1.2	U	1.2	0.68	U	0.68
Chlorobenzene	0.67	U	0.67	0.66	U	0.66	1	U	1	0.58	U	0.58
Chloroethane	1.1	U	1.1	1.1	U	1.1	1.7	U	1.7	0.96	U	0.96
Chloroform	0.36	U	0.36	0.36	U	0.36	0.56	U	0.56	0.31	U	0.31
Chloromethane	0.95	U	0.95	0.95	U	0.95	1.5	U	1.5	0.83	U	0.83
cis-1,3-Dichloropropene	1.6	U	1.6	1.6	U	1.6	2.5	U	2.5	1.4	U	1.4
Dibromochloromethane	0.7	U	0.7	0.7	U	0.7	1.1	U	1.1	0.62	U	0.62
Ethylbenzene	0.83	U	0.83	0.82	U	0.82	1.3	U	1.3	0.73	U	0.73
Methylenechloride	3	JB	2	7.9	B	2	18	B	3.1	5.8	B	1.7
Styrene	0.78	U	0.78	0.77	U	0.77	1.2	U	1.2	1.2	J	0.68
Tetrachloroethene	0.73	U	0.73	0.73	U	0.73	1.1	U	1.1	0.64	U	0.64
Toluene	0.85	U	0.85	0.85	U	0.85	1.3	U	1.3	0.75	U	0.75
trans-1,3-Dichloropropene	0.83	U	0.83	0.82	U	0.82	1.3	U	1.3	0.73	U	0.73
Trichloroethene	0.28	U	0.28	0.28	U	0.28	0.45	U	0.45	0.25	U	0.25
Vinyl chloride	1.7	U	1.7	1.6	U	1.6	2.6	U	2.6	1.5	U	1.5
Xylenes (total)	0.75	U	0.75	0.75	U	0.75	1.2	U	1.2	0.66	U	0.66

Table 5. Total Petroleum Hydrocarbon and Percent Moisture Sample Results Summary Table (4 of 4 Pages).

Sample Number	Sample Date	TPH - Diesel			TPH - Diesel EXT			Percent moisture (wet sample)		
		ug/kg	Q	PQL	ug/kg	Q	PQL	%	Q	PQL
J1PW06	7-25-2012	1700	J	660	1800	J	970	1		0
J1PW07	7-25-2012	840	J	680	1000	U	1000	0.74		0
J1PW08	7-25-2012	680	U	680	1000	U	1000	1.2		0
J1PW09	7-25-2012	640	U	640	940	U	940	2.1		0
J1PW10	7-25-2012	650	U	650	950	U	950	1.9		0
J1PW11	7-25-2012	12000		670	18000		990	0.97		0
J1PW12	7-25-2012	690	J	660	1200	J	970	1		0
J1PW13	7-25-2012	1200	J	650	1200	J	950	1.4		0
J1PW14	7-25-2012	88000		650	120000		950	0.85		0
J1PW15	7-25-2012	7200		680	11000		1000	0.92		0
J1PW16	7-25-2012	990	J	680	1700	J	990	0.98		0
J1PW17	7-25-2012	2100	J	680	2400	J	990	0.66		0
J1PW18	7-25-2012	2700	J	660	4800		960	1.2		0
J1PW19	7-25-2012	5100		680	7600		1000	1.1		0
J1PW34	7-25-2012	2500	JB	620	2900	JB	910	0.61		0
J1PW35	7-25-2012	5300	B	640	6400	B	950	0.97		0
J1PW36	7-25-2012	2100	JB	640	2700	JB	940	0.76		0
J1PW37	7-25-2012	28000	B	650	43000	B	950	0.66		0

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WCH, 2007, *Cultural Resources Review for Remediation of Seven Waste Sites Near Mooli Mooli in Zone A in the 100-N Area,* Interoffice Memorandum to D. A. Gamon from D.D. Teel, CCN 134189, Washington Closure Hanford, Richland, Washington, *June 7.*

WCH, 2012, *Verification Sampling of the 100-N6, 128-N-1, 128N-F8-3, 100-N-16, 128M-FS-2; Burn Pit 1, 100-N-98, 100-N Stain Area #3, 128-N-1, 128-N-1 Burni9ng Pit; 100-N Burning Pit Waste Sites,* 0100N-WI-G0049, Washington Closure Hanford, Richland, Washington.

128-N-1 Grouping of Waste Sites Additional Remediation and Resampling Request

Background Information

The 128-N-1 grouping of waste sites includes the 128-N-1, 100-N-6, 100-N-16, and 100-N-98 sites. Remedial action at the 128-N-1 grouping of waste sites was performed between August 2, 2010 and November 28, 2011, continuing to an approximate maximum depth of 3.5 m (11.5 ft). Verification sampling was conducted July 25, 2012 as per the approved verification work instruction. Two decision units were identified for the 128-N-1 grouping which includes the excavation and staging pile areas. (The staging pile area has not yet been verification sampled due to still needing the final scrape of the area after waste was removed). Twelve statistical samples plus quality assurance/quality control (QA/QC) samples and four focused sample were collected from the excavation decision unit.

Three sample locations, EXC-9 (sample J1PW14), EXC-13 (sample J1PW18) and FS-4 (sample J1PW37), failed direct exposure remedial action goals (RAGs). Locations EXC-9 and FS-4 failed for polycyclic aromatic hydrocarbons (PAHs) and the EXC-13 location failed for semivolatile organic analysis (SVOA).

Recommendation for Path Forward

Washington Closure Hanford proposes additional soil to be removed from the 128-N-1 grouping of waste sites excavation at the EXC-9, EXC-13, and FS-4 locations for disposal at the Environmental Restoration Disposal Facility. To be conservative, generally, half the distance between the failed verification sample location and the nearest passing verification sample location is used as the boundary for additional soil removal (Figure 1). The depth of additional soil removal will be between 1 to 2 meters depending on observations in the field (e.g., discolored or stained soil, debris, etc.).

Following additional soil removal, replacement samples will be collected at EXC-9, EXC-13, and FS-4. The replacement samples will be analyzed for the failing analyte(s) only. A summary of replacement samples, including sample location and requested analyses, is provided in Table 1.

Table 1. 128-N-1, 100-N-6, 100-N-16, 100-N-98

Waste Site Replacement Sample Summary.

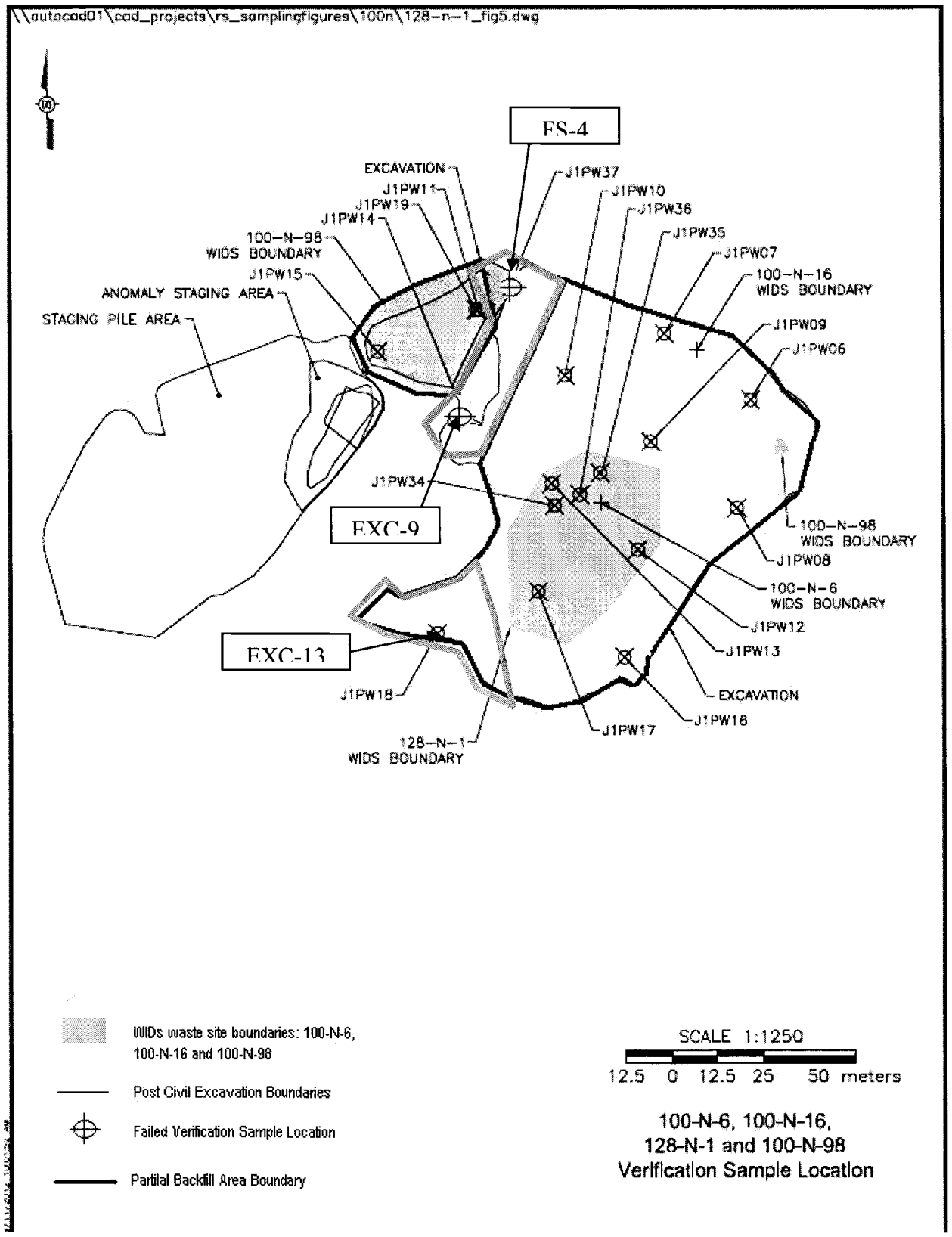
Sample Location	HEIS Sample Number	Washington State Plane Coordinates		Sample Analysis
		Northing	Easting	
EXC-9	TBD	149208.1	572088.0	PAH
EXC-13	TBD	149149.3	572080.4	SVOA
FS-4	TBD	149243.3	572100.2	PAH

HEIS = Hanford Environmental Information System

PAH = polycyclic aromatic hydrocarbons

SVOA = semivolatile organic analysis

Figure 1. 128-N-1 Group Additional Remediation Sketch.



Attachment 14

100K Area Unit Managers Meeting Status
November 8, 2012

RL-0012 Sludge Treatment Project

TPA Milestone M-016-173, *K Basin Sludge Treatment and Packaging Technology Selection*
- No change in status.

TPA Milestone M-016-174, *Complete Final Design of Sludge Retrieval and Transfer System*
- The ECRTS Preliminary Documented Safety Analysis (PDSA) is being finalized and scheduled to be submitted to RL early in calendar year 2013.

TPA Milestone M-016-175, *Begin Sludge Removal from 105-KW Fuel Storage Basin*
- Construction of the 105-KW Annex is in-progress with concrete pours planned for the week of November 12, 2012.
- Preparation continues for the Integrated Process Optimization Demonstration at MASF.

TPA Milestone M-016-176, *Complete Sludge Removal from 105-KW Fuel Storage Basin*
- No change in status.

TPA Milestone M-016-178, *Initiate Deactivation of 105-KW*
- No change in status.

RL-0041 K Facility Demolition and Soil Remediation

Remedial Actions:
- The RSVP for Area AG Zone 2 has been approved DOE and EPA. This RSVP supports the closure of phase 1 waste sites 100-K-3 and 100-K-36 and phase 3 waste site 100-K-79 subsite 7 (partial) as well as the 1706-KE, 1706-KEL, 1706-KER building footprints.
- The RSVP for Area AG Zone 1 has been approved by DOE and EPA. This RSVP supports the closure of phase 1 waste sites 100-K-3, 100-K-68, 100-K-69, 100-K-70, and 100-K-71 and phase 3 waste sites 100-K-47 (partial) and 100-K-56 (partial).
- The Removal Action Report for 182-K has been approved by DOE.

Demolition:

No demolition activities were conducted in the 100K area during October.

105-KE Interim Safe Storage:
- Work continues on construction of below-grade concrete pourbacks. To date, 32 of 34 pourbacks have been completed.
- Closure of reactor building above-ground openings is proceeding, with 12 of the 17 openings completed.
- Interior reactor cleanout work is on-going. Cleanout of the RCT office continues. Asbestos abatement and repair activities in the 3x ballroom have been completed.

Attachment 15

CHPRC Master Summary Schedule

05-Nov-12 01:56 PM

Project

FY2012 FY2013 FY2014 FY2015 FY2016 FY2017 FY2018 FY2019 FY2020 FY2021 FY2022 2023

Q1 FQ2 FQ3 FQ4 FQ1 FQ2 FQ3 FQ4 FQ1 FQ2 FQ3 FQ4 FQ1 FQ2 FQ3 FQ4 FQ1 FQ2 FQ3 FQ4 FQ1 FQ2 FQ3 FQ4 FQ1 FQ2 FQ3 FQ4 FQ1 FQ2 FQ3 FQ4 FQ1 FQ2 FQ3 FQ4 FQ1 FQ2 FQ3 FQ4 FQ1 FQ2 FQ3 FQ4 FQ1 FQ2 FQ3 FQ4 FQ1

RL-0012/41 SNF Stabilization and Disposition/Nuclear Facility D&D River Corridor

M-016-175 Begin Sludge Removal From 105-KW Fuel Storage Basin

◎M-016-175 Begin Sludge Removal From 105-KW Fuel Storage Basin

M-016-173 Select K Basin Sludge Trtmt and Pkg Tech and Propose New Interim M/S

◎M-016-173 Select K Basin Sludge Trtmt and Pkg Tech and Propose New Interim M/S

M-016-174 Complete Final Design of Sludge Retrieval and Transfer System

◎M-016-174 Complete Final Design of Sludge Retrieval and Transfer System

M-016-176 Complete Sludge Removal from 105-KW Fuel Storage Basin

◎M-016-176 Complete Sludge Removal from 105-KW Fuel Storage Basin

M-016-53 - Revegetation of Phase 1 Waste Sites

◎M-016-53 - Revegetation of Phase 1 Waste Sites

M-016-53 - Complete the Interim Response Actions for the Remaining 100K Waste Sites & Structures Phase 1

◎M-016-53 - Complete the Interim Response Actions for the Remaining 100K Waste Sites & Structures Phase 1

M-093-22 Pourbacks and Interior Clean Out

◎M-093-22 Pourbacks and Interior Clean Out

M-093-22 Complete 105KE Interim Safe Storage

◎M-093-22 Complete 105KE Interim Safe Storage

M-016-178: Initiate Deactivation of 105-KW Fuel Storage Basin

◎M-016-178: Initiate Deactivation of 105-KW Fuel Storage Basin

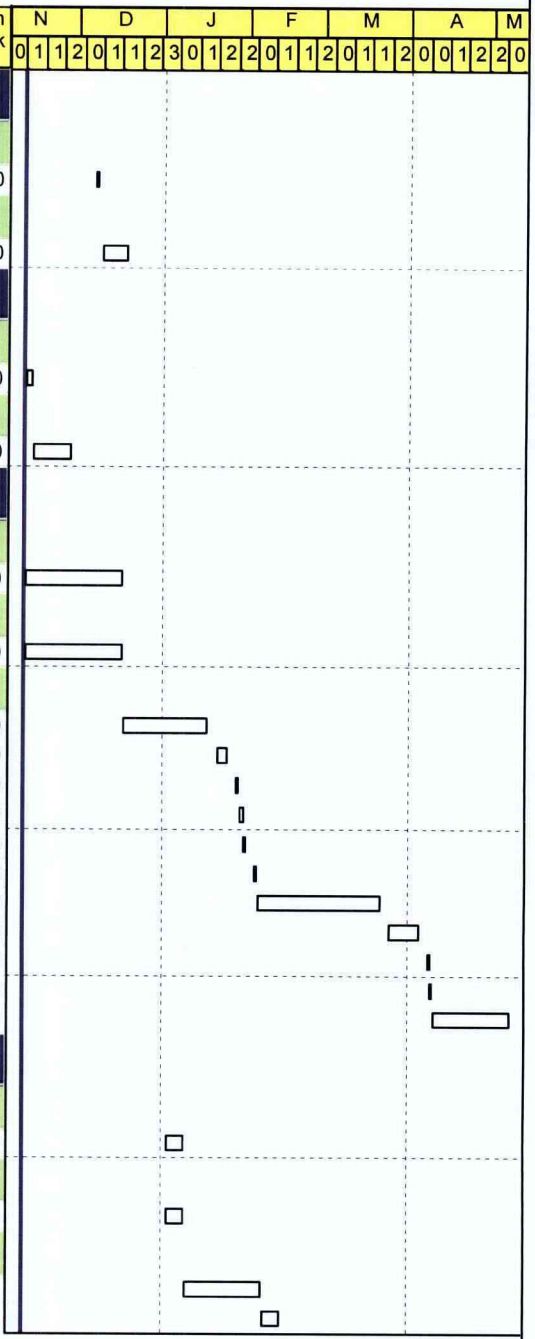
M-093-26 Initiate 105-KW Reactor Interim Safe Storage

◎M-093-26 Initiate 105-KW Reactor Interim Safe Storage

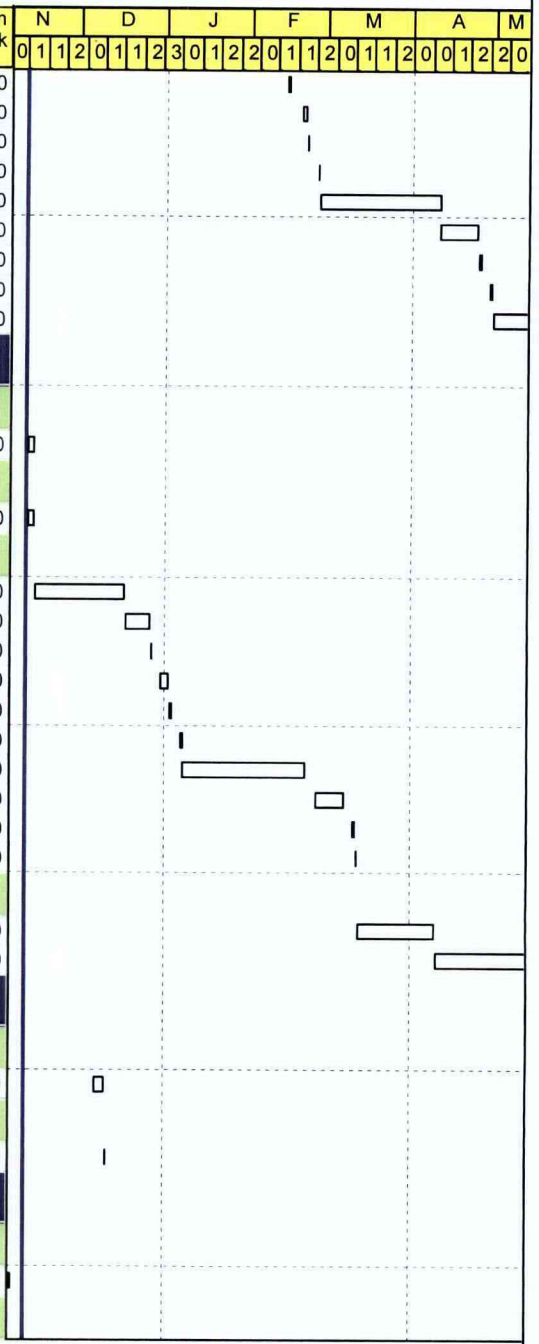
Activtiy PRC Critcial Path Path of Concern ∇ Milestone ◎TPA

Attachment 16

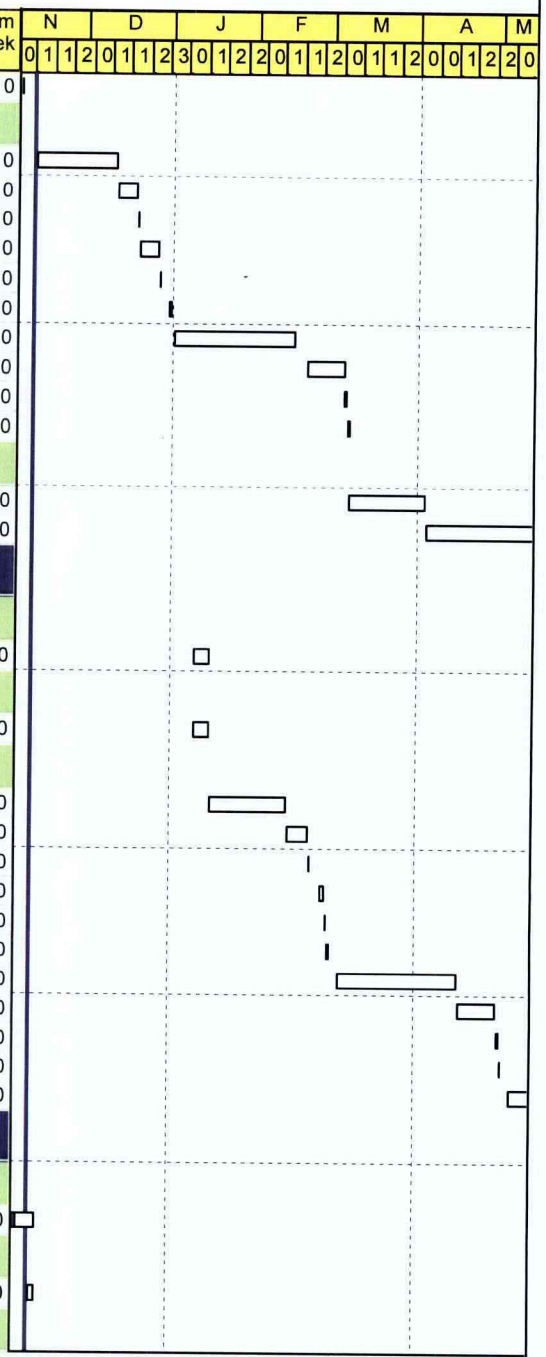
Activity ID	Activity Name	TPA	% Cmpl	RD	Start	Finish	Delta from Last Week
600-29							
Backfill							
RK629C	Backfill - 600-29 (8,220 BCMs)	Y	0%	1.0	07-Dec-12*	07-Dec-12	0
Revegetation							
RK629E2	Revegetation - 600-29 (14.5 Acres)	Y	0%	6.0	10-Dec-12*	18-Dec-12	0
128-K-2							
Backfill							
RK128C	Backfill - 128-K-2 (10,506 BCMs)	Y	0%	3.0	12-Nov-12*	14-Nov-12	0
Revegetation							
RK128E2	Revegetation - 128-K-2 (14.5 Acres)	Y	0%	6.0	15-Nov-12*	28-Nov-12	0
100-K-84 Red Soil Sw. of 118-K-1							
Excavation							
RK084A	Excavation - 100-K-84 (1,532 BCMs)	Y	0%	19.0	12-Nov-12	17-Dec-12	0
Loadout							
RK084B	Loadout -- 100-K-84 (3,371 USTs)	Y	0%	19.0	12-Nov-12	17-Dec-12	0
Closeout Sampling & Docs							
RK084DA	Field Input to SDCV - 100-K-84	Y	0%	16.0	18-Dec-12*	17-Jan-13	0
RK084D1	Prepare Internal Draft Work Instruction - 100-K-84	Y	0%	4.0	21-Jan-13	24-Jan-13	0
RK084D2	Format/Tech Edit W/I - 100-K-84	Y	0%	1.0	28-Jan-13	28-Jan-13	0
RK084D3	Internal Review W/I - 100-K-84	Y	0%	2.0	29-Jan-13	30-Jan-13	0
RK084D4	Incorporate Internal Review Comments W/I - 100-K-84	Y	0%	1.0	31-Jan-13	31-Jan-13	0
RK084D5	Final Format/Tech Edit/Internal Sigs W/I - 100-K-84	Y	0%	1.0	04-Feb-13	04-Feb-13	0
RK084D6	RL/Regulator Review Draft A Work Instruction for - 10...	Y	0%	26.0	05-Feb-13	21-Mar-13	0
RK084D7	Resolve Draft A Work Instruction Comments - 100-K-84	Y	0%	8.0	25-Mar-13	04-Apr-13	0
RK084D8	RL/Regulator Sign Rev. 0 Work Instruction for - 100-K...	Y	0%	1.0	08-Apr-13	08-Apr-13	0
RK084D9	Prepare and Issue Rev. 0 Work Instrn - 100-K-84	Y	0%	1.0	09-Apr-13	09-Apr-13	0
RK084D10	Verification Closeout Samples - 100-K-84	Y	0%	16.0	10-Apr-13	07-May-13	0
100-K-86 - Stained Areas							
Excavation							
RK086A	Excavation - 100-K-86 (140 BCMs)	Y	0%	4.0	03-Jan-13*	09-Jan-13	0
Loadout							
RK086B	Loadout -- 100-K-86 (307 USTs)	Y	0%	4.0	03-Jan-13	09-Jan-13	0
Closeout Sampling & Docs							
RK086DA	Field Input to SDCV - 100-K-86	Y	0%	16.0	10-Jan-13*	06-Feb-13	0
RK086D1	Prepare Internal Draft Work Instruction - 100-K-86	Y	0%	4.0	07-Feb-13	13-Feb-13	0



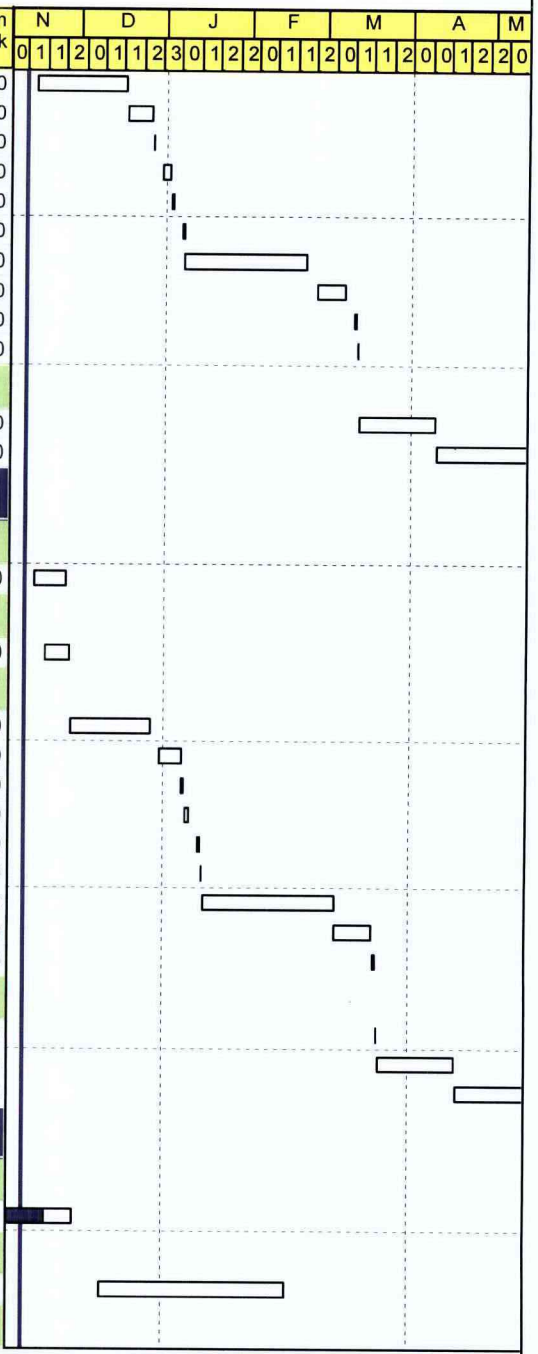
Activity ID	Activity Name	TPA	% Cmpl	RD	Start	Finish	Delta from Last Week
RK086D2	Format/Tech Edit W/I - 100-K-86	Y	0%	1.0	14-Feb-13	14-Feb-13	0
RK086D3	Internal Review W/I - 100-K-86	Y	0%	2.0	19-Feb-13	20-Feb-13	0
RK086D4	Incorporate Internal Review Comments W/I - 100-K-86	Y	0%	1.0	21-Feb-13	21-Feb-13	0
RK086D5	Final Format/Tech Edit/Internal Sigs W/I - 100-K-86	Y	0%	1.0	25-Feb-13	25-Feb-13	0
RK086D6	RL/Regulator Review Draft A Work Instruction for - 10...	Y	0%	26.0	26-Feb-13	10-Apr-13	0
RK086D7	Resolve Draft A Work Instruction Comments - 100-K-86	Y	0%	8.0	11-Apr-13	24-Apr-13	0
RK086D8	RL/Regulator Sign Rev. 0 Work Instruction for - 100-K...	Y	0%	1.0	25-Apr-13	25-Apr-13	0
RK086D9	Prepare and Issue Rev. 0 Work Instrn - 100-K-86	Y	0%	1.0	29-Apr-13	29-Apr-13	0
RK086D10	Verification Closeout Samples - 100-K-86	Y	0%	16.0	30-Apr-13	28-May-13	0
100-K-87 Asbestos							
Excavation							
RK087A	Excavation - 100-K-87 (0.5 BCMs)	Y	0%	3.0	12-Nov-12*	14-Nov-12	0
Loadout							
RK087B	Loadout -- 100-K-87 (1.1 USTs)	Y	0%	3.0	12-Nov-12*	14-Nov-12	0
Closeout Sampling & Docs							
RK087DA	Field Input to SDCV - 100-K-87	Y	0%	16.0	15-Nov-12*	17-Dec-12	0
RK087D1	Prepare Internal Draft Work Instruction - 100-K-87	Y	0%	4.0	18-Dec-12	26-Dec-12	0
RK087D2	Format/Tech Edit W/I - 100-K-87	Y	0%	1.0	27-Dec-12	27-Dec-12	0
RK087D3	Internal Review W/I - 100-K-87	Y	0%	2.0	31-Dec-12	02-Jan-13	0
RK087D4	Incorporate Internal Review Comments W/I - 100-K-87	Y	0%	1.0	03-Jan-13	03-Jan-13	0
RK087D5	Final Format/Tech Edit/Internal Sigs W/I - 100-K-87	Y	0%	1.0	07-Jan-13	07-Jan-13	0
RK087D6	RL/Regulator Review Draft A Work Instruction for - 10...	Y	0%	26.0	08-Jan-13	21-Feb-13	0
RK087D7	Resolve Draft A Work Instruction Comments - 100-K-87	Y	0%	8.0	25-Feb-13	07-Mar-13	0
RK087D8	RL/Regulator Sign Rev. 0 Work Instruction for - 100-K...	Y	0%	1.0	11-Mar-13	11-Mar-13	0
RK087D9	Prepare and Issue Rev. 0 Work Instrn - 100-K-87	Y	0%	1.0	12-Mar-13	12-Mar-13	0
Final Project Closeout							
RK087D10	Verification Closeout Samples - 100-K-87	Y	0%	16.0	13-Mar-13	09-Apr-13	0
RK087D11	Lab Analysis 100-K-87	Y	0%	26.0	10-Apr-13	23-May-13	0
100-K-89 - Burn Site # 1							
Backfill							
RK089C	Backfill - 100-K-89 (29 BCMs)	Y	0%	1.0	07-Dec-12*	10-Dec-12	0
Revegetation							
RK089E2	Revegetation - -100-K-89 (0.2 Acres)	Y	0%	1.0	11-Dec-12*	11-Dec-12	0
100-K-91 - Battery							
Excavation							
RK091A	Excavation - 100-K-91 (0.5 BCMs)	Y	100%	0.0	01-Nov-12 A	07-Nov-12 A	0
Loadout							



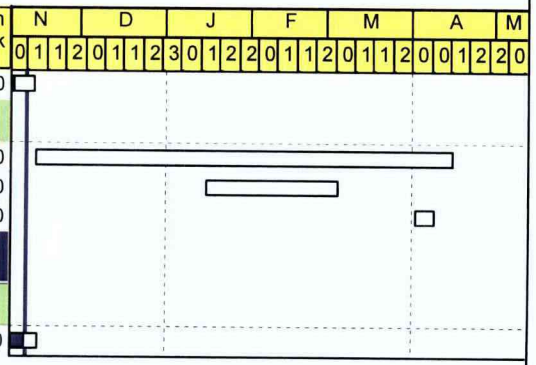
Activity ID	Activity Name	TPA	% Cmpl	RD	Start	Finish	Delta from Last Week
RK091B	Loadout -- 100-K-91 (1.1 USTs)	Y	100%	0.0	07-Nov-12 A	07-Nov-12 A	0
Closeout Sampling & Docs							
RK091DA	Field Input to SDCV - 100-K-91	Y	0%	16.0	12-Nov-12*	11-Dec-12	0
RK091D1	Prepare Internal Draft Work Instruction - 100-K-91	Y	0%	4.0	12-Dec-12	18-Dec-12	0
RK091D2	Format/Tech Edit W/I - 100-K-91	Y	0%	1.0	19-Dec-12	19-Dec-12	0
RK091D3	Internal Review W/I - 100-K-91	Y	0%	2.0	20-Dec-12	26-Dec-12	0
RK091D4	Incorporate Internal Review Comments W/I - 100-K-91	Y	0%	1.0	27-Dec-12	27-Dec-12	0
RK091D5	Final Format/Tech Edit/Internal Sigs W/I - 100-K-91	Y	0%	1.0	31-Dec-12	31-Dec-12	0
RK091D6	RL/Regulator Review Draft A Work Instruction for - 10...	Y	0%	26.0	02-Jan-13	14-Feb-13	0
RK091D7	Resolve Draft A Work Instruction Comments - 100-K-91	Y	0%	8.0	19-Feb-13	04-Mar-13	0
RK091D8	RL/Regulator Sign Rev. 0 Work Instruction for - 100-K...	Y	0%	1.0	05-Mar-13	05-Mar-13	0
RK091D9	Prepare and Issue Rev. 0 Work Instrn - 100-K-91	Y	0%	1.0	06-Mar-13	06-Mar-13	0
Final Project Closeout							
RK091D10	Verification Closeout Samples - 100-K-91	Y	0%	16.0	07-Mar-13	03-Apr-13	0
RK091D11	Lab Analysis 100-K-91	Y	0%	26.0	04-Apr-13	20-May-13	0
100-K-92 - Reddish Stained Gravels							
Excavation							
RK092A	Excavation - 100-K-92 (7 BCMs)	Y	0%	3.0	10-Jan-13*	15-Jan-13	0
Loadout							
RK092B	Loadout -- 100-K-92 (16 USTs)	Y	0%	3.0	10-Jan-13*	15-Jan-13	0
Closeout Sampling & Docs							
RK092DA	Field Input to SDCV - 100-K-92	Y	0%	16.0	16-Jan-13*	12-Feb-13	0
RK092D1	Prepare Internal Draft Work Instruction - 100-K-92	Y	0%	4.0	13-Feb-13	20-Feb-13	0
RK092D2	Format/Tech Edit W/I - 100-K-92	Y	0%	1.0	21-Feb-13	21-Feb-13	0
RK092D3	Internal Review W/I - 100-K-92	Y	0%	2.0	25-Feb-13	26-Feb-13	0
RK092D4	Incorporate Internal Review Comments W/I - 100-K-92	Y	0%	1.0	27-Feb-13	27-Feb-13	0
RK092D5	Final Format/Tech Edit/Internal Sigs W/I - 100-K-92	Y	0%	1.0	28-Feb-13	28-Feb-13	0
RK092D6	RL/Regulator Review Draft A Work Instruction for - 10...	Y	0%	26.0	04-Mar-13	16-Apr-13	0
RK092D7	Resolve Draft A Work Instruction Comments - 100-K-92	Y	0%	8.0	17-Apr-13	30-Apr-13	0
RK092D8	RL/Regulator Sign Rev. 0 Work Instruction for - 100-K...	Y	0%	1.0	01-May-13	01-May-13	0
RK092D9	Prepare and Issue Rev. 0 Work Instrn - 100-K-92	Y	0%	1.0	02-May-13	02-May-13	0
RK092D10	Verification Closeout Samples - 100-K-92		0%	16.0	06-May-13	03-Jun-13	0
100-K-93 - Drum Remnant							
Excavation							
RK093A	Excavation - 100-K-93 (0.5 BCMs)	Y	50%	3.0	01-Nov-12 A	14-Nov-12	0
Loadout							
RK093B	Loadout -- 100-K-93 (1.1 USTs)	Y	0%	3.0	12-Nov-12*	14-Nov-12	0
Closeout Sampling & Docs							



Activity ID	Activity Name	TPA	% Cmpl	RD	Start	Finish	Delta from Last Week
RK093DA	Field Input to SDCV - 100-K-93	Y	0%	16.0	15-Nov-12*	17-Dec-12	0
RK093D1	Prepare Internal Draft Work Instruction - 100-K-93	Y	0%	4.0	18-Dec-12	26-Dec-12	0
RK093D2	Format/Tech Edit W/I - 100-K-93	Y	0%	1.0	27-Dec-12	27-Dec-12	0
RK093D3	Internal Review W/I - 100-K-93	Y	0%	2.0	31-Dec-12	02-Jan-13	0
RK093D4	Incorporate Internal Review Comments W/I - 100-K-93	Y	0%	1.0	03-Jan-13	03-Jan-13	0
RK093D5	Final Format/Tech Edit/Internal Sigs W/I - 100-K-93	Y	0%	1.0	07-Jan-13	07-Jan-13	0
RK093D6	RL/Regulator Review Draft A Work Instruction for - 10...	Y	0%	26.0	08-Jan-13	21-Feb-13	0
RK093D7	Resolve Draft A Work Instruction Comments - 100-K-93	Y	0%	8.0	25-Feb-13	07-Mar-13	0
RK093D8	RL/Regulator Sign Rev. 0 Work Instruction for - 100-K...	Y	0%	1.0	11-Mar-13	11-Mar-13	0
RK093D9	Prepare and Issue Rev. 0 Work Instrn - 100-K-93	Y	0%	1.0	12-Mar-13	12-Mar-13	0
Final Project Closeout							
RK093D10	Verification Closeout Samples - 100-K-93	Y	0%	16.0	13-Mar-13	09-Apr-13	0
RK093D11	Lab Analysis 100-K-93	Y	0%	26.0	10-Apr-13	23-May-13	0
100-K-95 - Tar Dump							
Excavation							
RK095A	Excavation - 100-K-95 (124 BCMs)	Y	0%	4.0	15-Nov-12*	26-Nov-12	0
Loadout							
RK095B	Loadout -- 100-K-95 (273 USTs)	Y	0%	4.0	19-Nov-12*	27-Nov-12	0
Closeout Sampling & Docs							
RK095DA	Field Input to SDCV - 100-K-95	Y	0%	16.0	28-Nov-12*	27-Dec-12	0
RK095D1	Prepare Internal Draft Work Instruction - 100-K-95	Y	0%	4.0	31-Dec-12	07-Jan-13	0
RK095D2	Format/Tech Edit W/I - 100-K-95	Y	0%	1.0	08-Jan-13	08-Jan-13	0
RK095D3	Internal Review W/I - 100-K-95	Y	0%	2.0	09-Jan-13	10-Jan-13	0
RK095D4	Incorporate Internal Review Comments W/I - 100-K-95	Y	0%	1.0	14-Jan-13	14-Jan-13	0
RK095D5	Final Format/Tech Edit/Internal Sigs W/I - 100-K-95	Y	0%	1.0	15-Jan-13	15-Jan-13	0
RK095D6	RL/Regulator Review Draft A Work Instruction for - 10...	Y	0%	26.0	16-Jan-13	04-Mar-13	0
RK095D7	Resolve Draft A Work Instruction Comments - 100-K-95	Y	0%	8.0	05-Mar-13	18-Mar-13	0
RK095D8	RL/Regulator Sign Rev. 0 Work Instruction for - 100-K...	Y	0%	1.0	19-Mar-13	19-Mar-13	0
Final Project Closeout							
RK095D9	Prepare and Issue Rev. 0 Work Instrn - 100-K-95	Y	0%	1.0	20-Mar-13	20-Mar-13	0
RK095D10	Verification Closeout Samples - 100-K-95	Y	0%	16.0	21-Mar-13	17-Apr-13	0
RK095D11	Lab Analysis 100-K-95	Y	0%	26.0	18-Apr-13	04-Jun-13	0
118-K-1 Burial Ground							
Excavation							
RK18KA2	118-K-1 Excavation (56,815 BCM)	Y	99%	10.0	15-Mar-10 A	29-Nov-12	0
Backfill							
RK18K18035	Backfill 118-K-1 Trenches (Including Trench N)	Y	0%	47.0	10-Dec-12*	15-Feb-13	0
Closeout Sampling & Docs							



Activity ID	Activity Name	TPA	% Cmpl	RD	Start	Finish	Delta from Last Week
RKICP12155	Closure Sampling 118-K-1 BG	Y	95%	3.0	11-Jun-12 A	14-Nov-12	0
Final Project Closeout							
RK18K12030	Prepare Closure Document 118-K-1	Y	0%	80.0	15-Nov-12	15-Apr-13	0
RK18K12062	RL/Reg Review Draft A Closure Document for - 118-K-1	Y	0%	26.0	16-Jan-13	04-Mar-13	0
RK18K12052	RL/Reg Sign Rev. 0 Closure Document for - 118-K-1	Y	0%	4.0	02-Apr-13	08-Apr-13	0
100-K Miscellaneous Items							
Loadout							
RKDPMFY50	100-K MR Sites Remediation	N	80%	4.0	22-Oct-12 A	15-Nov-12	0



Attachment 17

168476

^WCH Document Control

From: Saueressig, Daniel G
Sent: Thursday, November 01, 2012 12:39 PM
To: ^WCH Document Control
Subject: FW: REQUEST FOR APPROVAL CERCLA WASTE CONTAINER STORAGE AREAS AT 100-K
Attachments: if049002.PDF

Please provide a chron number (and include the attachment). This email documents a regulatory agreement.

Thanks,

Dan Saueressig
FR Environmental Project Lead
Washington Closure Hanford
521-5326

From: Guzzetti.Christopher@epamail.epa.gov [mailto:Guzzetti.Christopher@epamail.epa.gov]
Sent: Thursday, November 01, 2012 12:36 PM
To: Saueressig, Daniel G
Cc: Glossbrenner, Ellwood T
Subject: Re: REQUEST FOR APPROVAL CERCLA WASTE CONTAINER STORAGE AREAS AT 100-K

I concur.

Christopher J. Guzzetti
U.S. EPA Region 10
Hanford Project Office
Phone: (509) 376-9529
Fax: (509) 376-2396
Email: guzzetti.christopher@epa.gov

"Saueressig, Daniel G" ---11/01/2012 12:25:04 PM---Chris, I am requesting your approval to set up CERCLA waste container storage area at the 100-K Area

From: "Saueressig, Daniel G" <dgsauere@wch-rcc.com>
To: Christopher Guzzetti/R10/USEPA/US@EPA
Cc: "Glossbrenner, Ellwood T" <ellwood.glossbrenner@rl.doe.gov>
Date: 11/01/2012 12:25 PM
Subject: REQUEST FOR APPROVAL CERCLA WASTE CONTAINER STORAGE AREAS AT 100-K

Chris, I am requesting your approval to set up CERCLA waste container storage area at the 100-K Area. The container storage area will be established north of the administrative trailer at 100-K to support management of some lead contaminated soil from 100-K-91 (refer to attached drawing).

This storage area could operate for up to 1 year (a one time 1 year extension could be requested, if needed, but is not expected).

Other types of waste that may need to be stored there includes spill cleanup material (hydraulic fluids and fuels combined with soil), personal protective clothing from confirmatory and/or verification sampling, and

potentially lead or other anomalous material encountered during remediation of various waste sites. The container storage area will be managed in compliance with the substantive Washington Administrative Code container management requirements, including WAC 173-303-630 and -646(7).

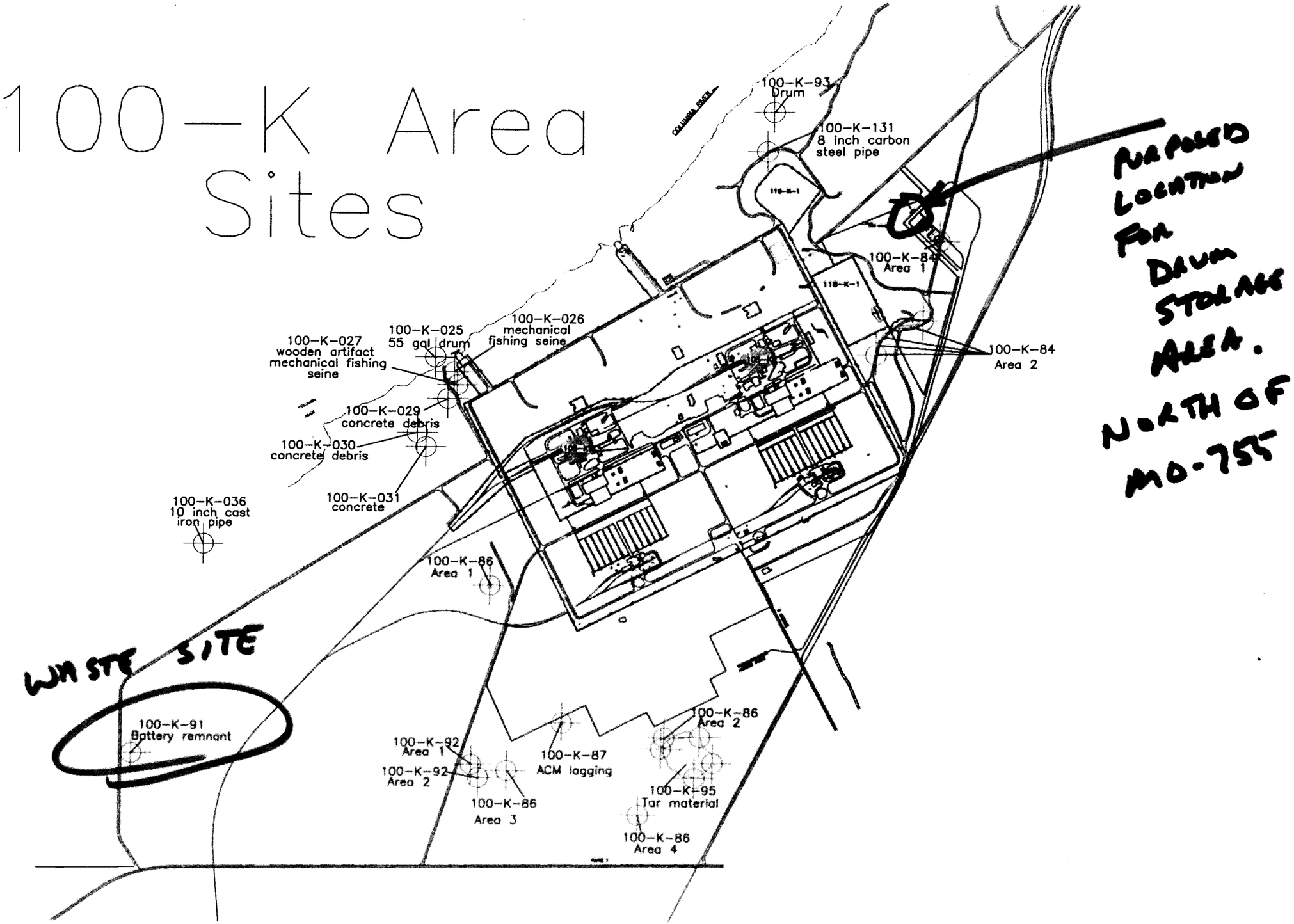
Let me know if you concur or give me a call if you have any questions.

Thanks,

Dan Saueressig
FR Environmental Project Lead
Washington Closure Hanford
521-5326

<<if049002.PDF>> [attachment "if049002.PDF" deleted by Christopher Guzzetti/R10/USEPA/US]

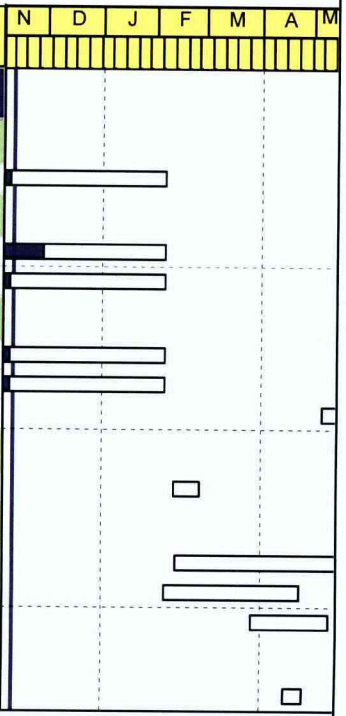
100-K Area Sites



PROPOSED LOCATION FOR DRUM STORAGE AREA. NORTH OF MO-755

Attachment 18

Activity ID	Activity Name	TPA	% Cmpl	RD	Start	Finish	Delta from Last Week
100-C-7 Waste Site Remediation							
Excavation							
BC502A71	100-C-7:1 West Wall Add Excav (125,000 BCM)	Y	30%	45.0	03-Oct-12 A	05-Feb-13	0
Loadout							
BC502B91	100-C-7:1 Continued Stockpile Loadout (50,000 UST)	Y	45%	45.0	03-Oct-12 A	05-Feb-13	0
BC502B41	100-C-7:1 West Wall Loadout (95,000 UST)	Y	5%	45.0	06-Nov-12 A	05-Feb-13	0
Backfill							
BC502C11	100-C-7:1 Backfill (110,000 BCMs) AUW	Y	30%	45.0	03-Oct-12 A	05-Feb-13	0
BC502C1	100-C-7 Backfill (352,000 BCMs)	Y	15%	45.0	25-Oct-12 A	05-Feb-13	0
BC502C31	100-C-7:1 Post C-7 Work Remaining Material (600,000 BCMs) AUW	Y	0%	100.0	06-May-13*	25-Sep-13	0
Revegetation							
BC502E2	100-C-7 Perform Revegetation (60 acres)	Y	0%	8.0	11-Feb-13*	25-Feb-13	0
Closeout Sampling & Docs							
BC524G16	Prepare Work Instruction for 100-C-7:1 West Sidewall	Y	0%	60.0	12-Feb-13*	29-May-13	0
BC502D121	Closure Sampling & Analysis for 100-C-7:1 Stock Pile Areas	Y	0%	42.0	06-Feb-13	22-Apr-13	0
BC524G26	RL/Regulator Review Draft A Work Instruction for 100-C-7:1 West Sidewall	Y	0%	26.0	27-Mar-13	09-May-13	0
Final Project Closeout							
BC524G96	Backfill Concurrence for 100-C-7:1 and West Wall Plume	N	0%	8.0	15-Apr-13*	25-Apr-13	0



Attachment 19

300 Area Closure Project Status
November 8, 2012
100/300 Area Combined Unit Manager Meeting

Ongoing Activities

- 300-15 – Process sewer remediation north of Apple ongoing.
- 309 Reactor – Core drilling and lower reactor space interference removal ongoing.
- 340 Complex – Excavation of vault and transport ramp complete. Preparations for vault removal ongoing.
- 3730 – Hazardous material removal nearly complete, hot-cell stabilization pending.
- 308A – Completing transport ramp and TRIGA reactor for removal.
- 323 – Below-grade demolition and tank removal ongoing.
- 321 – Remediation excavation at design limits, plume continues to the south. Remediation of UPR-300-4 will resume following removal of 323 below-grade tanks.
- 329 – Above-grade demolition ongoing, ~ 50% complete.
- 310 – below-grade demolition ongoing.
- 382 Complex – above-grade demolition nearly complete.
- 324 – Steam coil replacement 50% complete (one bank installed). Completed backfill of geo-probe excavation on north side of building.

Demolition & Remediation Preparation Activities

- 326 Building – characterization nearly complete, finalizing demolition approach.
- 331 Series – demolition preparations nearly complete.

60-Day Project Look Ahead

- Continue authorization reviews for asbestos abatement activities.
- Continue 340 Complex waste site remediation and vault removal.
- Prep and remove TRIGA reactor.
- Complete north of Apple process sewer (300-15) remediation and backfill.
- Continue 309 reactor removal activities.
- Complete 310 TEDF demolition.
- Complete above-grade 329 Building demolition.
- Complete 382 Complex demolition.
- Award last remediation procurement for all remaining waste sites south of Apple St.

Attachment 20

Tri-Party Agreement

Change Notice for Modifying Approved Documents/ Workplans In Accordance with the Tri-Party Agreement Action Plan, Section 9.0, *Documentation and Records*

Change Number	Document Submitted Under Tri-Party Agreement Milestone	Date:
TPA-CN-534		8/24/2012

Document Number and Title: DOE/RL-2001-47, Rev. 3 Remedial Design Report/Remedial Action Work Plan for the 300 Area

Date Document Last Issued: December 2009

Originator: Mark French **Phone:** 373-9863

Description of Change: Section 3.5.2 of the document describes excavation methods of burial grounds. Methods have been refined since 300-FF-2 remediation activities began so that some of the text is no longer reflective of preferred methods. A change is being made to the description of burial ground excavation where drummed waste is known to be present.

M. French (DOE) and L. Gadbois (Lead Regulatory Agency) agree that the proposed change modifies an approved workplan/document and will be processed in accordance with the Tri-Party Agreement Action Plan, Section 9.0, *Documentation and Records*, and not Chapter 12.0, *Changes to the Agreement.*

Justification and Impacts of Change:

Affected page is 3-9

Shading indicates changes.

Approvals:

M French DOE Project Manager	8/24/12 Date	✓ Approved	__ Disapproved	
Larry Gadbois Lead Regulatory Project Manager	8-24-2012 Date	✓ Approved	__ Disapproved	

93

Once all the above steps have been completed, the originator sends a copy of the signed change notice to the MSA TPAI organization (H7-28), the Administrative Record (H6-08) (refer to TPA Action Plan, Section 9.3), lead regulatory agency, affected Hanford contractor, DOE Project Manager, project/contractor Document Custodian, and others as appropriate. Maintain the original Change Notice per approved Records Management procedures.

3.5.2 Excavation of Burial Grounds, Dump Sites, and Test Sites

Following completion of pre-excavation activities, excavation involves removing clean and contaminated soil, debris, and anomalous waste present within the site boundaries. For all burial grounds and dump sites, materials will be excavated with standard construction equipment using one or more of the following techniques to sort and disposition waste:

- **0.3-m (1-ft) Horizontal Lifts.** The exposed surface of each lift will be visually observed, radiologically screened, sorted as necessary to remove anomalous material and large debris, and then excavated using heavy equipment and stockpiled. Material will also be observed as it is being stockpiled for any additional sorting that is appropriate.

- **0.3-m (1-ft) Diagonal (Sloping) Lifts.** The exposed surface of each lift will be visually observed as it is raked down the face of an excavation slope using heavy equipment. Material will be radiologically surveyed at the bottom of the slope, sorted as necessary, and stockpiled. Material will also be observed as it is being stockpiled for any additional sorting that is appropriate.

- **Bulk Excavate and Spread.** Material will be bulk excavated using heavy equipment, and then spread onto the ground in approximately 0.3-m (1-ft) layers. The shallow layer of material will then be radiologically screened and sorted.

- **0.2-m (0.5-ft) Loader Lifts.** The surface of each lift will be visually observed, radiologically screened, sorted as necessary, and then excavated using the front-end loader. This technique is best suited for areas with little visible debris.

In excavation areas where there are large quantities of observed lead-containing materials (e.g., lead bricks, lead slag) intermixed with the soil, a variation of these excavation/sorting methods may be used. Observation, sorting, and radiological surveys for removal of the large materials and non-lead anomalous materials will be performed using one or more of the above-described methods. The remaining materials may then be identified as meeting the RCRA definition of "soil" per 40 CFR 268.2 and considered hazardous/dangerous due to lead contamination. In such cases, the soil will be sampled in accordance with the appropriate 300 Area SAP (DOE-RL 2009a, 2009c) and transported to the ERDF or other approved facility for treatment (stabilization) and subsequent disposal.

Additional excavation/waste retrieval methods in support of remediation of the 618-10 and 618-11 Burial Grounds may be used and are discussed in *600 Area Remediation Design Solution Technology Assessment and Deselection Report* (WCH 2007a). These methods include such technologies as overcasing, in-situ vitrification, and manually or remote-operated excavation.

Sluicing (use of water) is not an acceptable excavation method. ~~Excavation operations in areas where there is known drummed waste will be performed using horizontal lifts as described above. In all other cases, selection~~ Selection of the excavation/sorting method will be made by the remedial action subcontractor, and the method may be changed to another approved method

Attachment 21

Tri-Party Agreement

Change Notice for Modifying Approved Documents/ Workplans
In Accordance with the Tri-Party Agreement Action Plan,
Section 9.0, *Documentation and Records*

Change Number	Document Submitted Under Tri-Party Agreement Milestone	Date:
TPA-CN-535		8/24/2012

Document Number and Title:	Date Document Last Issued:
DOE/RL-2001-48, Rev. 3 300 Area Remedial Action Sampling and Analysis Plan	December 2010

Originator: Mark French	Phone: 373-9863

Description of Change: Table 2-1 is being modified to update EPA analytical methods for cyanide and sulfide.

M. French (DOE) and L. Gadbois (Lead Regulatory Agency) agree that the proposed change modifies an approved workplan/document and will be processed in accordance with the Tri-Party Agreement Action Plan, Section 9.0, *Documentation and Records*, and not Chapter 12.0, *Changes to the Agreement.*

Justification and Impacts of Change:

EPA analytical method for cyanide analysis is being updated from method 9010 to 9014. EPA analytical method for sulfide analysis is being updated from method 9030 to 9034. The method changes reflect recent revisions of the SW-846 manual by the EPA. Affected page is 2-12.

Shading indicates changes.

Approvals:

M S French DOE Project Manager	8/21/12 Date	✓ Approved	__ Disapproved	
Larry Gadbois Lead Regulatory Project Manager	8-24-2012 Date	✓ Approved	__ Disapproved	

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Once all the above steps have been completed, the originator sends a copy of the signed change notice to the MSA TPAI organization (H7-28), the Administrative Record (H6-08) (refer to TPA Action Plan, Section 9.3), lead regulatory agency, affected Hanford contractor, DOE Project Manager, project/contractor Document Custodian, and others as appropriate. Maintain the original Change Notice per approved Records Management procedures.

Table 2-1. Standard Fixed Laboratory Performance Requirements. (4 Pages)

COPCs	Industrial Land-Use Cleanup Level[a] (mg/kg)	Unrestricted Land-Use Cleanup Level (mg/kg)	Waste Designation Action Level[b] (mg/kg)	Analytical Method	Soil RDL (mg/kg)	Precision Req't (%RPD)	Accuracy Req't (%Recovery)
Inorganics							
Chloride	NA	25,000[d]	N/A	EPA 300.0	2	±30%[e]	70%-130%[e]
Cyanide	70,000	1.04[d]	590	EPA ~~9010~~ 9014	0.5	±30%[e]	70%-130%[e]
Fluoride	210,000	96[d]	N/A	EPA 300.0	5	±30%[e]	70%-130%[e]
Nitrate	5,600,000	1,000[d]	N/A	EPA 300.0	2.5	±30%[e]	70%-130%[e]
Nitrite	350,000	100[d]	N/A	EPA 300.0	2.5	±30%[e]	70%-130%[e]
Sulfate	N/A	25,000[d]	N/A	EPA 300.0	5	±30%[e]	70%-130%[e]
Sulfide	N/A	N/A	Reactivity	EPA ~~9030~~ 9034	5	±30%[e]	70%-130%[e]
Organics							
PCBs	65.6	0.017[d]	50/500	EPA 8082	0.0165	±30%[h]	50%-150%[h]
SVOAs	Compound-specific	Compound-specific	Compound-specific	EPA 8270	0.66[i]	±30%[h]	50%-150%[h]
VOAs	Compound-specific	Compound-specific	Compound-specific	EPA 8260	0.01[i]	±30%[h]	50%-150%[h]
TPH	200	200	N/A	WTPH-D+	5	±30%[h]	50%-150%[h]
Physical Properties							
Ignitability	N/A	N./A	60° C (140 °F)	EPA 1010	1 °C	± 30%	70% - 130%
Corrosivity	N/A	N/A	≤2, ≥12.5	EPA 9040, 9045	0.1 pH unit	N/A	N/A
Other							
Asbestos	1 ppm	1 ppm	1%	NIOSH 7400 PCM	1%	N/A	N/A

Attachment 22

Environmental Protection Mission Completion Project
November 8, 2012

Long-Term Stewardship

- The 100-F Area turnover and transition package is currently being consolidated with other contractor's input. The document is scheduled to be submitted to RL for review in December.
- Initiated the drafting of the 100-FR-1 Operable Unit Interim Remedial Action Report.

Remedial Investigation of Hanford Site Releases to the Columbia River

- The Tri-Parties approved the *Columbia River Component Risk Assessment: Volume II: Baseline Human Health Risk Assessment* (DOE/RL-2010-117, Rev. 0) on October 22. Production and distribution activities have been initiated.

Document Review Look-Ahead

- None